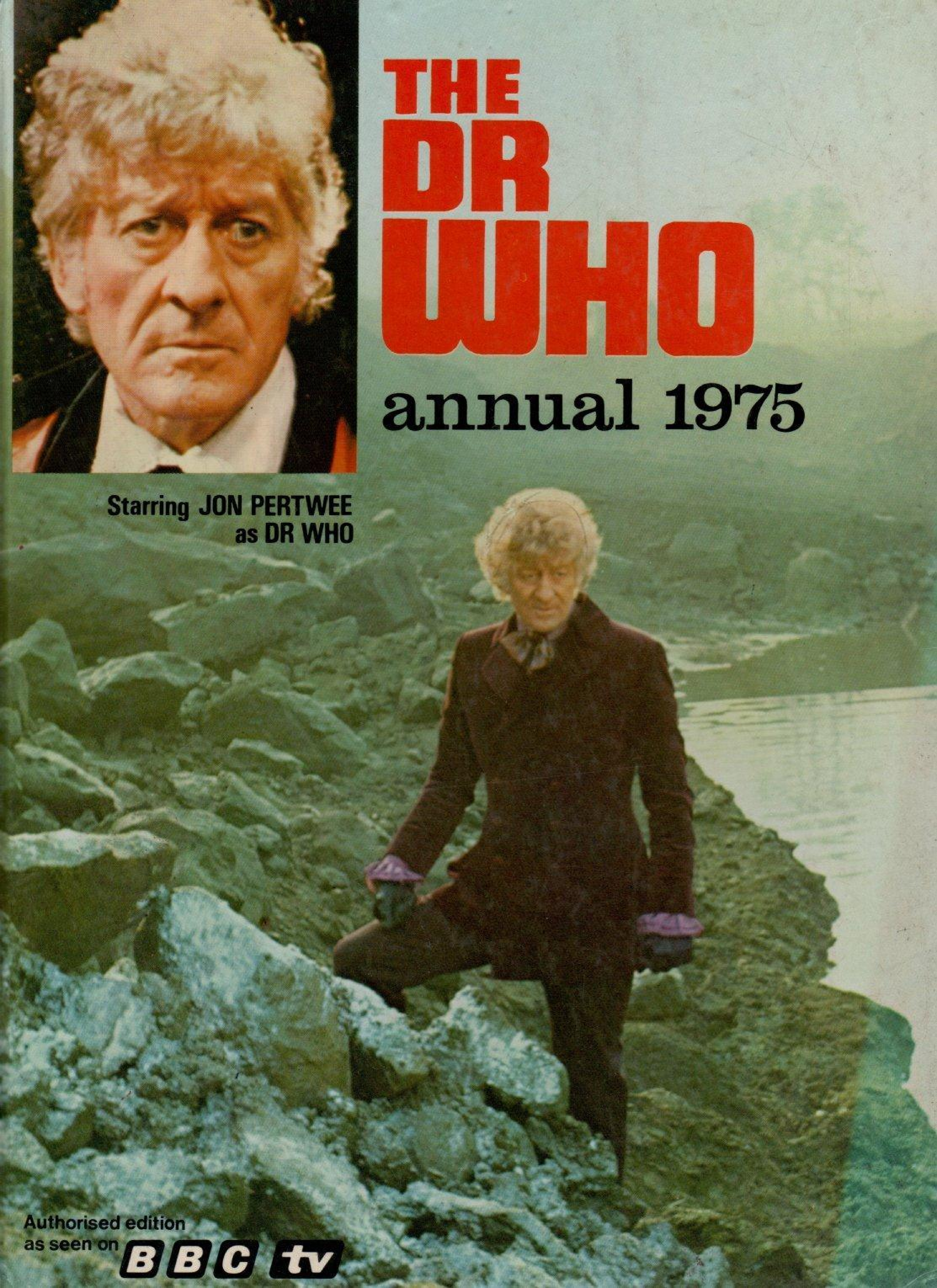
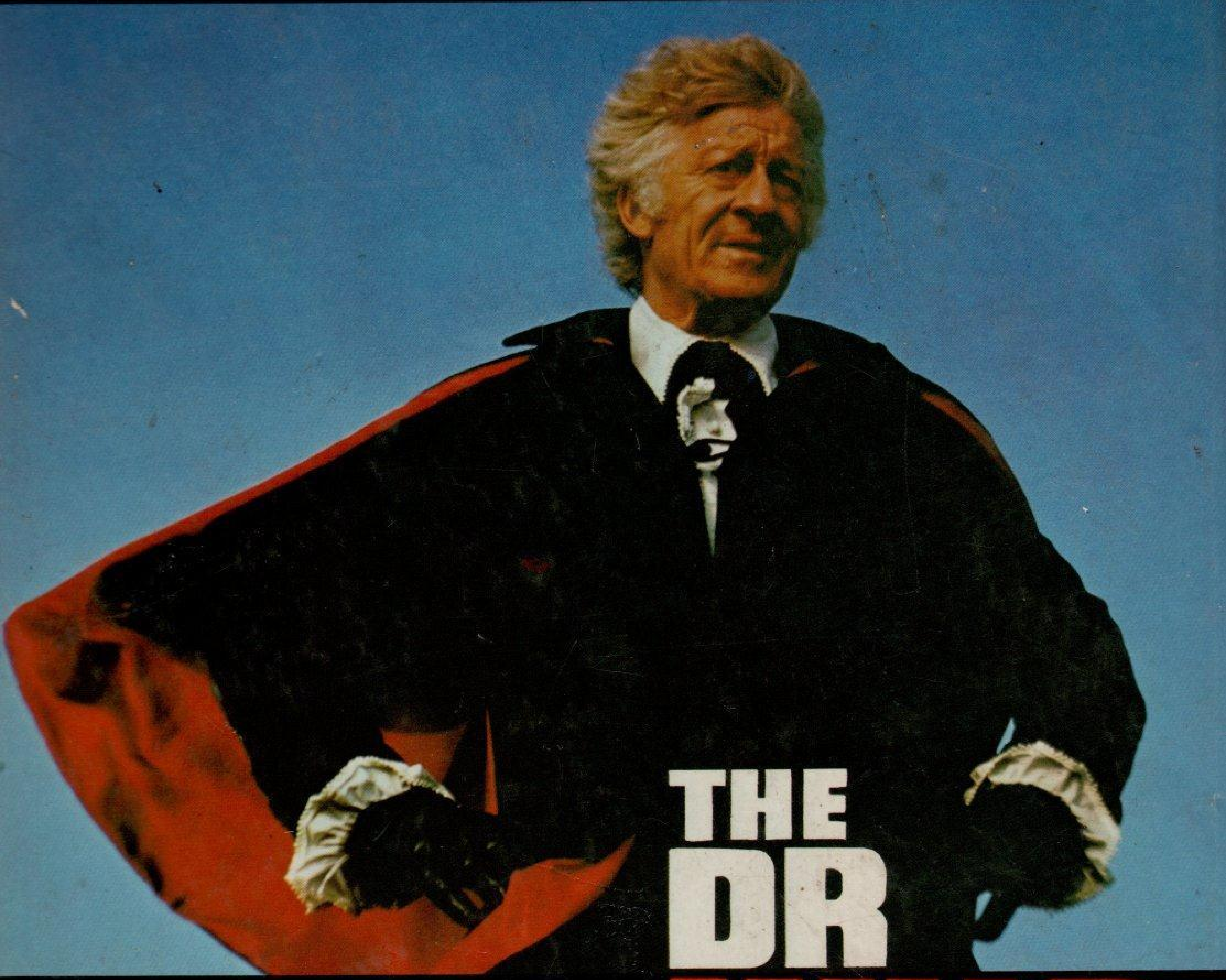
# THE DR WHO

## annual 1975



Starring JON PERTWEE
as DR WHO

Authorised edition
as seen on BBC tv



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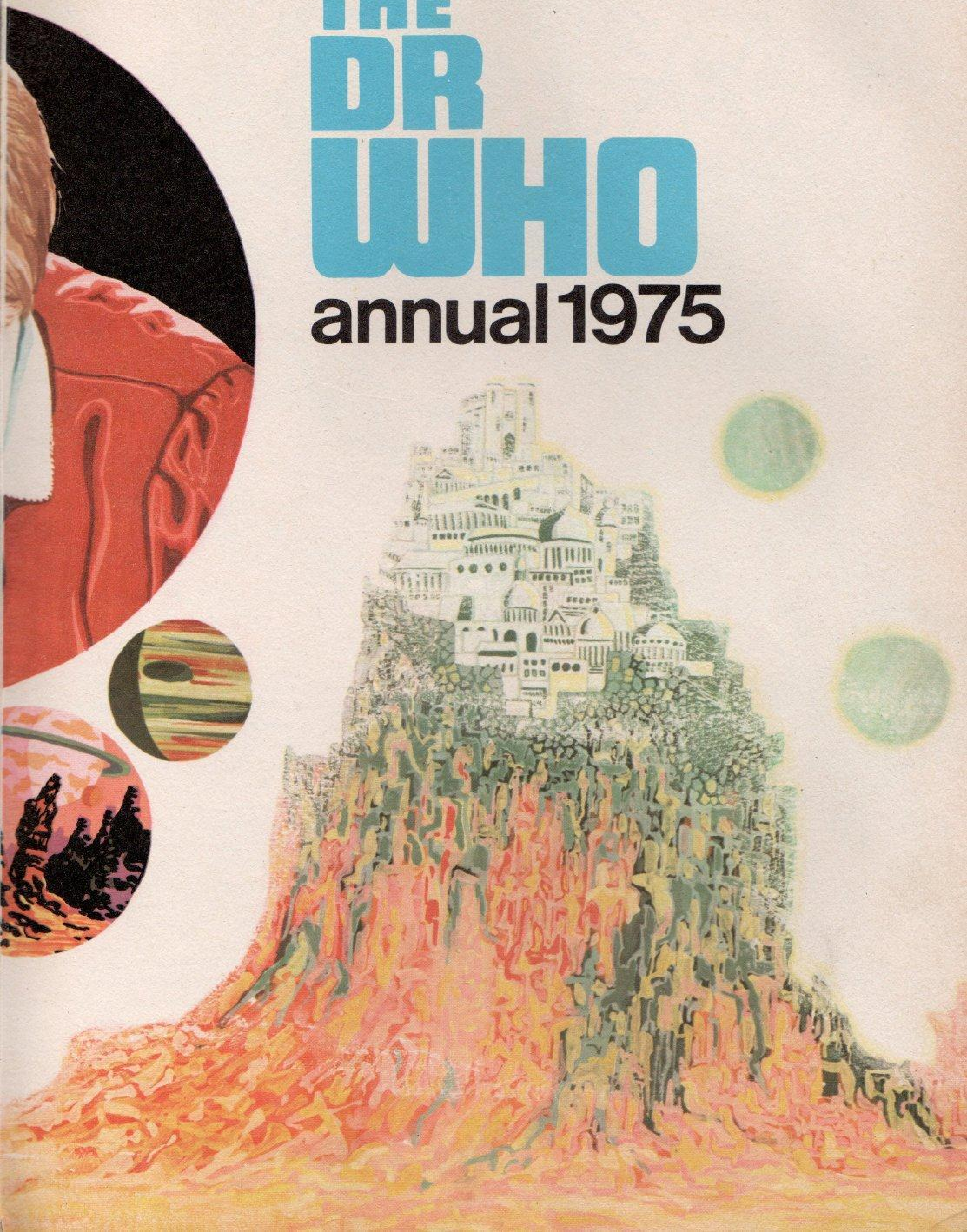
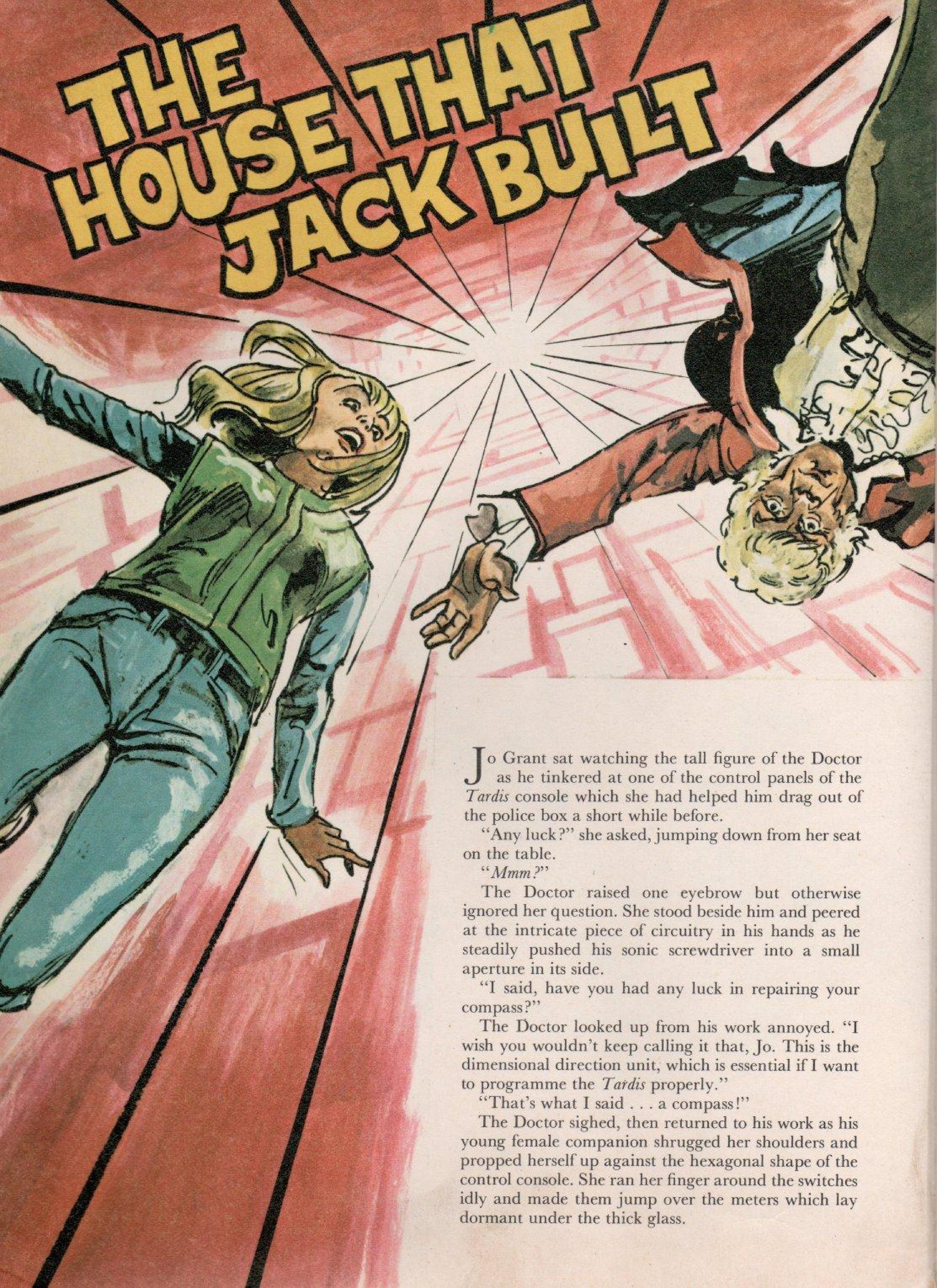


# THE HOUSE THAT JACK BUILT



Jo Grant sat watching the tall figure of the Doctor as he tinkered at one of the control panels of the *Tardis* console which she had helped him drag out of the police box a short while before.

"Any luck?" she asked, jumping down from her seat on the table.

"*Mmm?*"

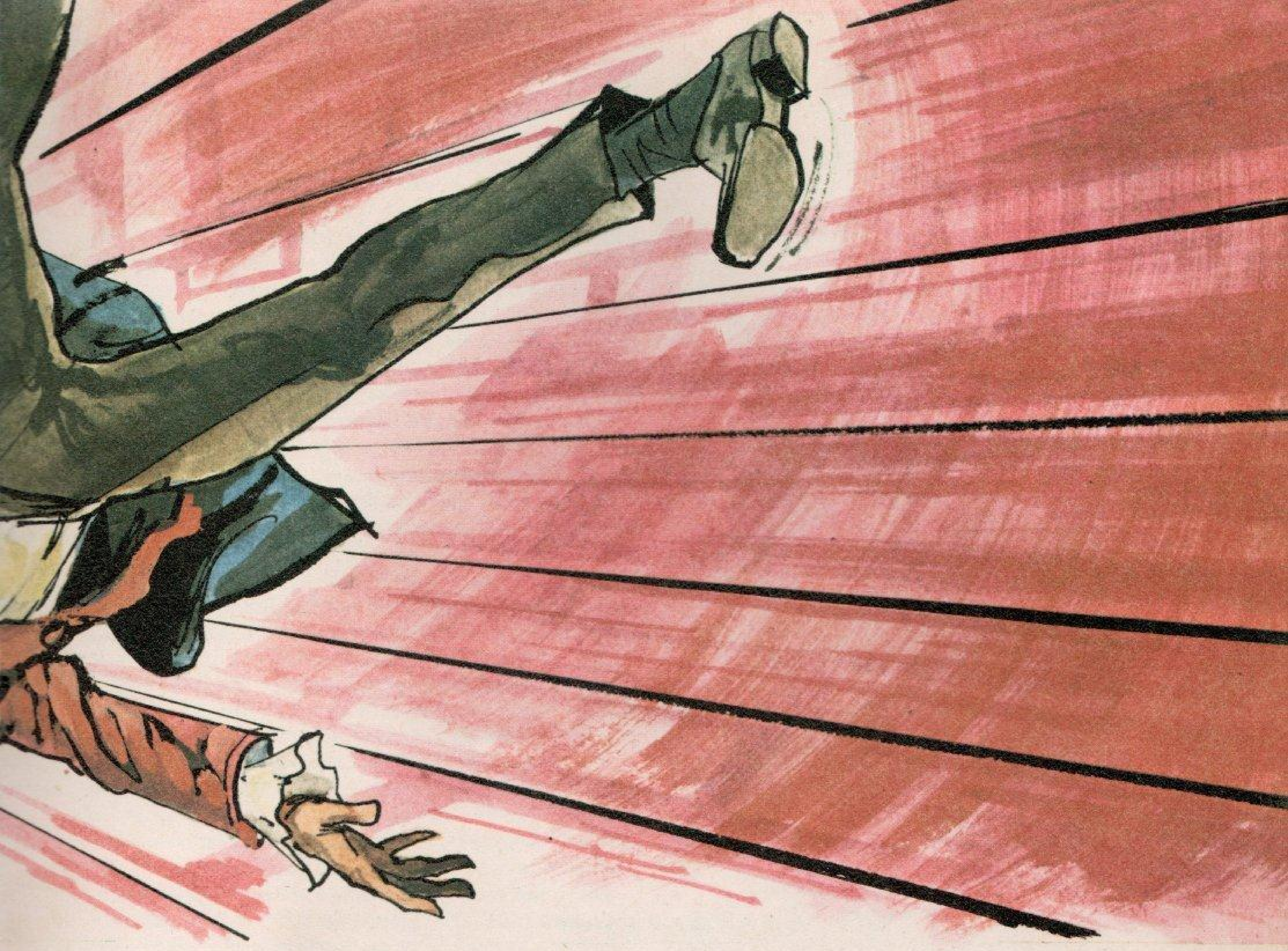
The Doctor raised one eyebrow but otherwise ignored her question. She stood beside him and peered at the intricate piece of circuitry in his hands as he steadily pushed his sonic screwdriver into a small aperture in its side.

"I said, have you had any luck in repairing your compass?"

The Doctor looked up from his work annoyed. "I wish you wouldn't keep calling it that, Jo. This is the dimensional direction unit, which is essential if I want to programme the *Tardis* properly."

"That's what I said . . . a compass!"

The Doctor sighed, then returned to his work as his young female companion shrugged her shoulders and propped herself up against the hexagonal shape of the control console. She ran her finger around the switches idly and made them jump over the meters which lay dormant under the thick glass.



"Watch what you're doing, Jo, we don't want a . . ."

Suddenly the room shook violently and the Doctor dropped his workpiece on the floor. Jo reached for the console to steady herself, but it shimmered as if through a heat haze . . . and her hand passed right through it.

She screamed to the Doctor but no sound came from her lips. Instead a loud swishing sound filled the air and the walls began to spin in front of her eyes. She reached out for the Doctor's arm, but Jo was suddenly wrenched from the room together with her companion, and hurtled through the walls into a black void. She felt herself being propelled through time and space by some unknown force, with the Doctor's voice calling to her from somewhere in the distance.

As she sped through the unknown void, unconsciousness began to cloud her mind, but before falling completely into a deep sleep she could see that it was getting lighter . . . and the Doctor was ahead of her as they sped along an endless corridor, as if carried on a cushion of air. Everything grew confused, and she slipped into the sleep of the unconscious mind.

Jo Grant's eye lids fluttered open as she emerged from the darkness to see a black, cloaked figure towering above her. Her eyes grew used to the light and she could see it was the Doctor who was smiling down at her. He bent down and helped the girl to her feet. She swayed for a moment, but then found her legs were growing more steady by the second.

"Well, Miss Grant, we seem to have arrived," announced the Doctor, waving an arm around.

She peered around her to see a brilliant white room, with no decor apart from a heavy oak door set in the furthest wall.

"Where are we?" she gasped.

"That," announced the Time Lord, "is what I intend to find out. Come on."

The Doctor strode over to the door and grasped the handle. He shot back as a charge of electricity crackled up his arm. Laughter echoed from an unknown source around the room.

"Who is the prettiest one of all . . .?" boomed the voice, then erupted into a thunder of laughter as before.

As suddenly as it came the sound stopped, leaving Jo and the Doctor speechless. The Doctor was the first to break the silence.

"Seems this place is inhabited then . . . by a lunatic, by the sound of it."

He bent down and examined the menacing handle.

"Single wire electrocution . . . very ingenious," remarked the Time Lord.

"It seems our captor is on that often quoted border between genius and madness. Now let's see what I can do about getting us out of here."

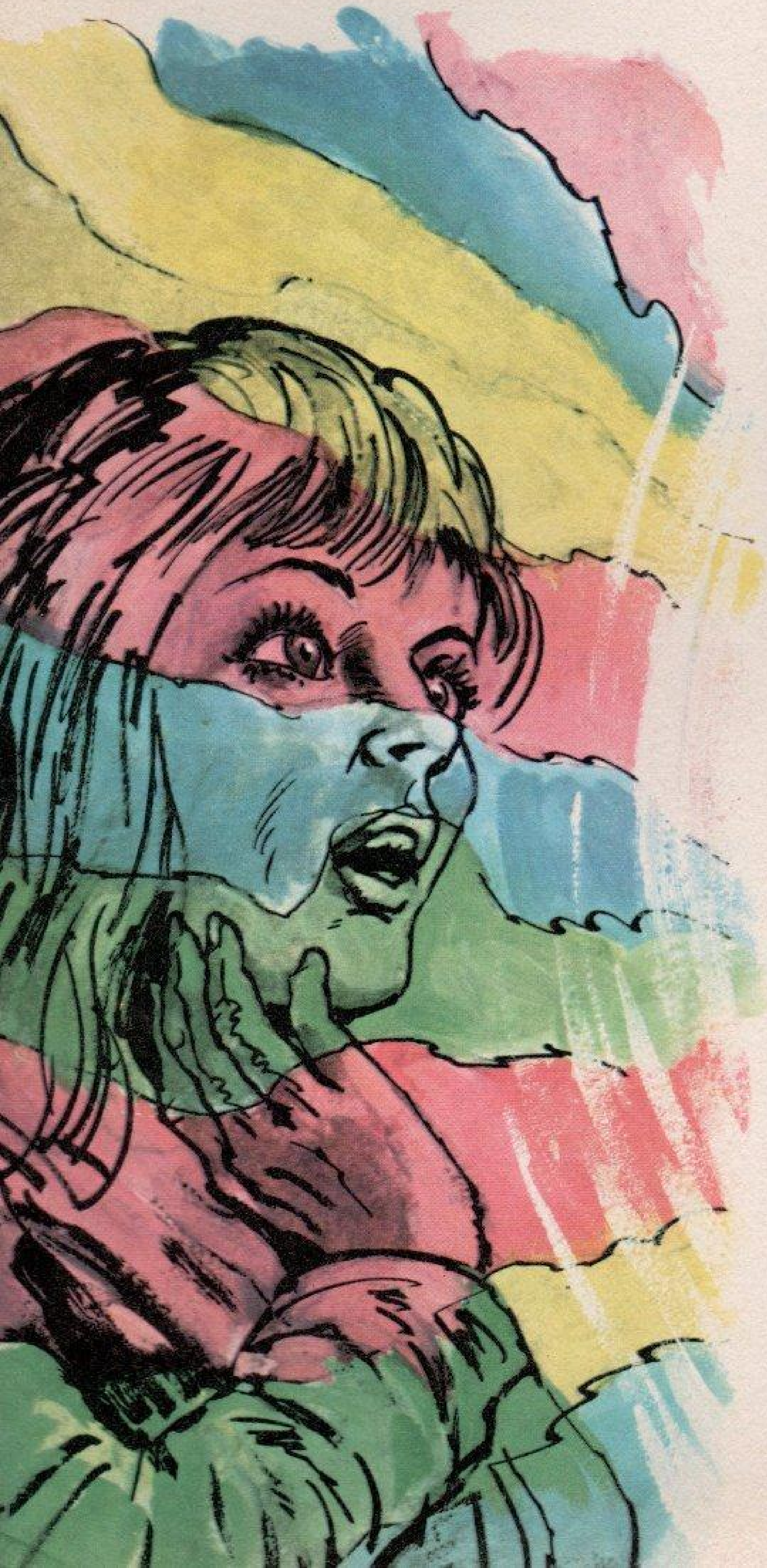
Jo watched as the celestial alien delved into his pockets and extracted a long piece of machinery – his sonic screwdriver.

"Shield your eyes, Jo," he said.

The young girl obeyed, covering her eyes with her arms.

The Doctor lifted his cloak up over the lock and behind the black curtain pressed the blade into the lock and touched the ornamented handle with the shaft. There was a loud bang and thunderous crackling as the Doctor's cape blew up into his face in a cloud of smoke.

Jo Grant peeped through the space between her arms to see the Doctor dropping the veil of black to reveal a burnt-out lock with a black streaked handle which had slightly melted above.



"What happened?" asked Jo in a shrill voice.

"As I said," began the Doctor, "the lock was electrified by a single wire system. That means that the lock and handle were both positively charged, so when I connected the two with my screwdriver . . . *kaboom!*"

He then turned and pressed the handle down, somewhat gingerly. The door swung open and the Doctor shot a quick smile at his companion. They stepped through the frame into complete darkness. It was as dark here as it was bright in the room they had just left.

The duo entered and the door behind them slammed shut, cutting off their only source of light. Jo was about to ask the invisible Doctor what they were going to do now, when the floor began to vibrate, the whine of engines started up, and something could be felt moving in the centre of the room.

Suddenly light began to flash throughout the room, and between the brilliant flares Jo could see a carousel, highly decorated with a large mirrored ball on the roof, which spun in rhythm with the revolving horses, which spun faster and faster as the engines rose into higher speeds. The horses began to blend together as the spinning made the wooden animals into a pink and white blur of movement. The ball at the top of the chaos spun faster, throwing light from its face to splash against the amazed duo standing below.

"This is a madhouse," hissed the Doctor over the engine noise.

He looked over to his companion to see her staring at the large mirrored ball which spun frantically in the air. The lights swept across her face to pause a moment in her wide eyes then disappear to be replaced by another brilliant outburst. The hypnotic spinning increased as a voice whispered to her: ". . . who's the prettiest one of all? Come to me . . . come to me. . . ."

Jo paused and stared at the wall of movement shimmering in front of her. The conscious side of her brain battled to tell her that to go any nearer the carousel would be instant death, but her subconscious triumphed, with the voice as an ally.

"Come to me."

"Yes, I must come to you . . ." echoed the girl, her eyes glazed and fixed on the ball spinning in the air in ever increasing and decreasing throbs. She took a step forwards and could feel the current of the air created by the mad machine blow her hair out behind her. Then a hand reached out, grabbed her arm, spun her round and another hand drew a sharp smack across her cheek.

Jo Grant staggered forward, to be caught by the Doctor. "What . . . what happened . . .?"

"I'll tell you later," urged the Doctor," but we must get out of here before this machine does any more harm!"

Then the whine of the engines ceased and the carousel skidded to a halt.

"Our host has found that little game useless," remarked the Doctor.

"Just what is this place?" squealed Jo. "It seems full of deadly devices and voices asking us 'who's the prettiest one of all?' "

The Doctor pinched his lower lip thoughtfully.

"Yes, I had been thinking about that, but I can't make out anything logical from it."

"Oh, I wish I had stayed where I was," groaned the girl.

"What do you mean?" puzzled the Time Lord.

"Well, if I hadn't fiddled around with the *Tardis* console, we wouldn't be here, would we?"

"My dear Miss Grant, you had nothing to do with getting us here! The console had been disconnected. No, someone or something has drawn us here for some purpose only known to themselves."

Jo Grant's eyes widened.

"Then how are we going to get out of here?"

The Doctor looked grave.

"Let's see what's behind the next door," he said, ignoring Jo's question.

They crossed over to the door, past the now stationary carousel, and the Doctor touched the handle lightly. Finding it safe, he pushed down and slowly opened the door.

The room beyond was dimly lit, with no furnishings except two full length mirrors on the far wall which seemed to glow around the frame with a silver radiance.

"Nothing menacing here, I think. Let's try the next room." They walked past the mirrors, their reflections following them as they travelled past.

Jo reached out and grabbed the Doctor's arm. "Here!" she shouted, then said more quietly, "Here."

The Doctor looked puzzled.

"What is it, Jo? What's wrong?"

Jo Grant waved a finger in front of her.

"Something about this room. Something in here . . ."

"There's nothing in here except two mirrors. Now come on, I want to get out of here."

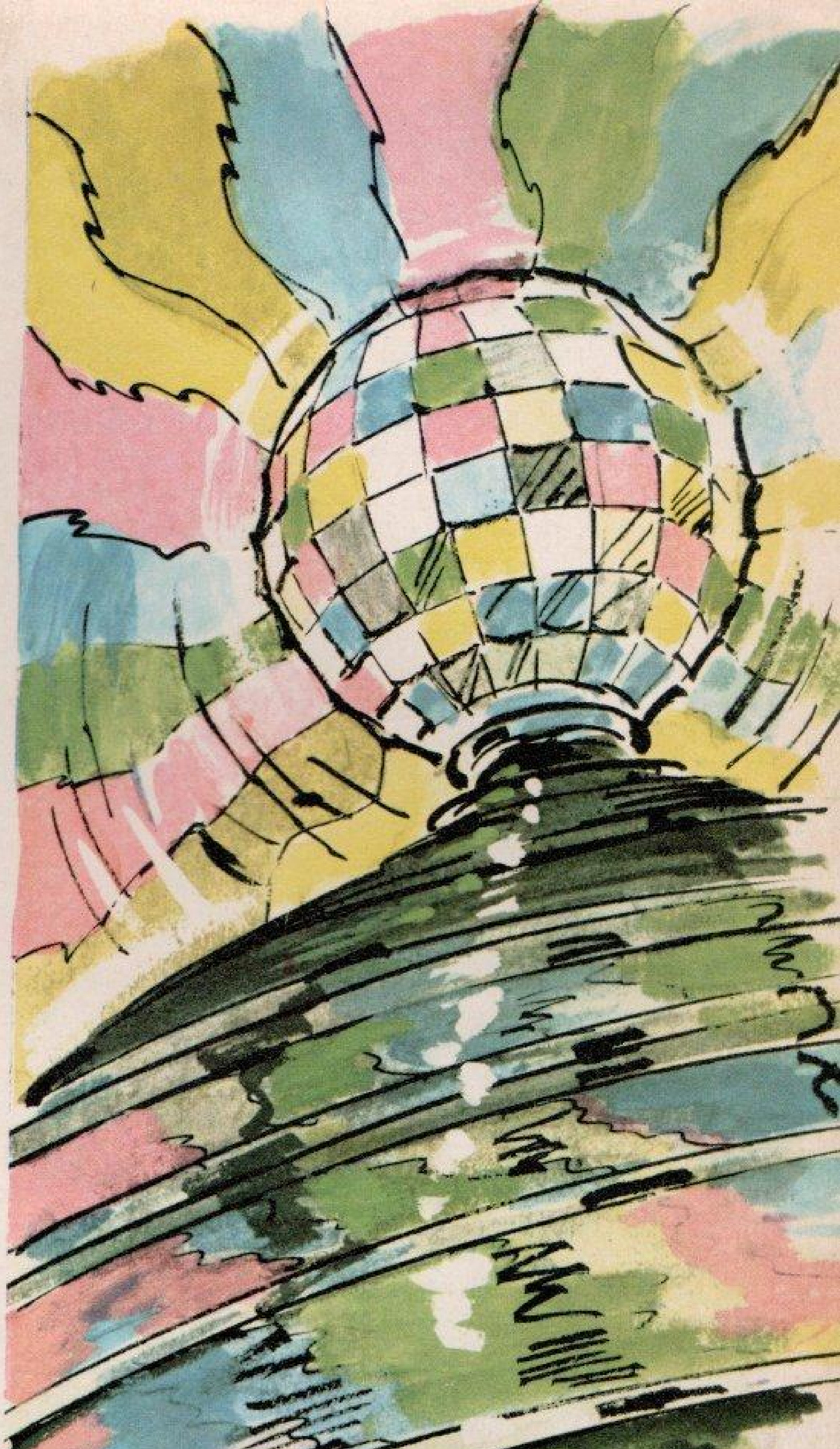
Jo shook her head as if to rid herself of cobwebs which clouded her mind, then she followed the Doctor to the next room. Yet another heavy oak door creaked open and they stepped into a huge hall with subdued lighting similar to the room with the carousel, except that this time, instead of the colourful roundabout, there was a blue police box standing in the centre of a huge chess board, each black or white square being at least four feet across. Behind the blue box stood an army of chess pieces, each one black and menacing, and ready to do battle.

"I hope you know how to play chess, Jo."

"But, Doctor, look! It's the *Tardis!*" Jo shrieked, standing on the first square of the giant games board.

"Who's the prettiest one of all?" boomed the voice, as if to signify the beginning of the duel.

Jo skidded to a halt. She was on the first square at the left hand side of the board. The corresponding section at the other end of the room lit up, and the black Queen's Castle slid from its position. Below the turrets of the piece sprang two sharp blades which glistened fearfully in the dim light. As it manoeuvred itself on the board, the blades began to spin round at an alarming rate. Jo stood there, petrified, as the chess piece shot across the board towards her, the blades whining like some primeval war cry.



The Doctor sprang from his position at the safety area towards Jo and grabbed her, throwing her two squares into the board. The castle shot past them until it met the safety area, where it faded from sight.

"Doctor, what are we going to do? There isn't another door out of here!" shrieked the young girl.

"The police box obviously represents the prize for the winner of this barbaric game. Head for there."

By this time another square had lit up and a Bishop was hurtling towards them, its outline glowing from the highly-charged electric current it carried, which meant death to anyone it touched. The Doctor propelled Jo away from him as the piece slid between the two of them to fade into the safety area behind them.

"Run, Jo!" yelled the Doctor as he raced across the board towards the large blue police box.

As they scurried towards the prize the sequence of squares lit up at the other side and the pawns and pieces moved forwards towards their victims. More squares lit up with each step they took towards the box and slid in an army towards them.

"Jo, look out!" warned the Doctor as an electrified Knight skimmed past her side.

It made contact and the girl screamed as a charge of electricity shot into her side. Dodging another Rook, the Doctor picked the girl up from the board and dragged her to the police box. The huge King lumbered towards them, its crown a myriad of razor sharp blades which spun towards them.

The Doctor hammered his fist onto the doors of the box and dragged his unconscious companion into the darkness of the interior. He found the dimensions were exactly the same inside as out, unlike his own machine. The double doors slammed shut and the Doctor could feel the floor moving, carrying him and his assistant towards a light far above them.

The Time Lord bent down and felt Jo's pulse at the side of her neck. He could feel the blood pound against his fingers and he sighed with relief.

The girl moaned as she struggled to regain consciousness when the square section of floor that carried them upwards emerged into a brightly lit control room which hummed with electronic activity. The elevator jerked to a halt and the Doctor stepped from the conveyor into the control room which flashed on and off with irregular pulses as the collection of machines each carried out its individual function.

"We've escaped your little games," shouted the Doctor. "Now . . . show yourself!"

His voice echoed throughout the complex and died away before the strange noise floated through the air. It was like a heartbeat, but was also filled with the noise of a computer read-out, a gentle purring or ticking. A section of wall slid upwards and the Doctor spun round to the source of the noise and movement.

A giant computer was revealed, its tape spinning left, and then right, its gauges showing life and then stillness, its giant viewing screen throbbing red and blue and white.

"Why have you brought us here?" asked the Doctor, automatically thinking this was the entity that had kidnapped them from Earth and brought them here.

There was a low whirr as the computer digested the question, then a grating, inhuman voice replied, "It amuses me."

The statement was so unexpected and short that the Doctor was momentarily lost for words. A computer that had developed a sense of amusement was something he had never encountered before in all his voyages through the fourth and fifth dimensions.

"Amusement!" hissed the Doctor. "But . . . but why us?"

"You are above human intellect," it said, then after another whirring of calculation added, "It was unfortunate your friend was involved."

"Unfortunate!" growled the Doctor. "You very nearly killed her!"

The computer remained silent.

"What do you plan to do now?" enquired the Doctor sharply.

"You must remain here until you find the way back to your planet."

"There *is* a way, then?"

Somewhere behind him a tape recorder spool began to revolve and the lunatic voice burst into the room: "Who is the prettiest one of all?!"

"Stop playing that ridiculous quotation!" bellowed the Doctor.

"Mirror, mirror on the wall . . ." hissed a voice from behind him.

The Doctor spun round to see Jo, one arm propping her up while her free hand ran through her sandy hair in exasperation.

"Of course!" she exclaimed. "'Mirror, mirror on the wall, who is the prettiest one of all'."

She leapt to her feet and hurried over to the Doctor.

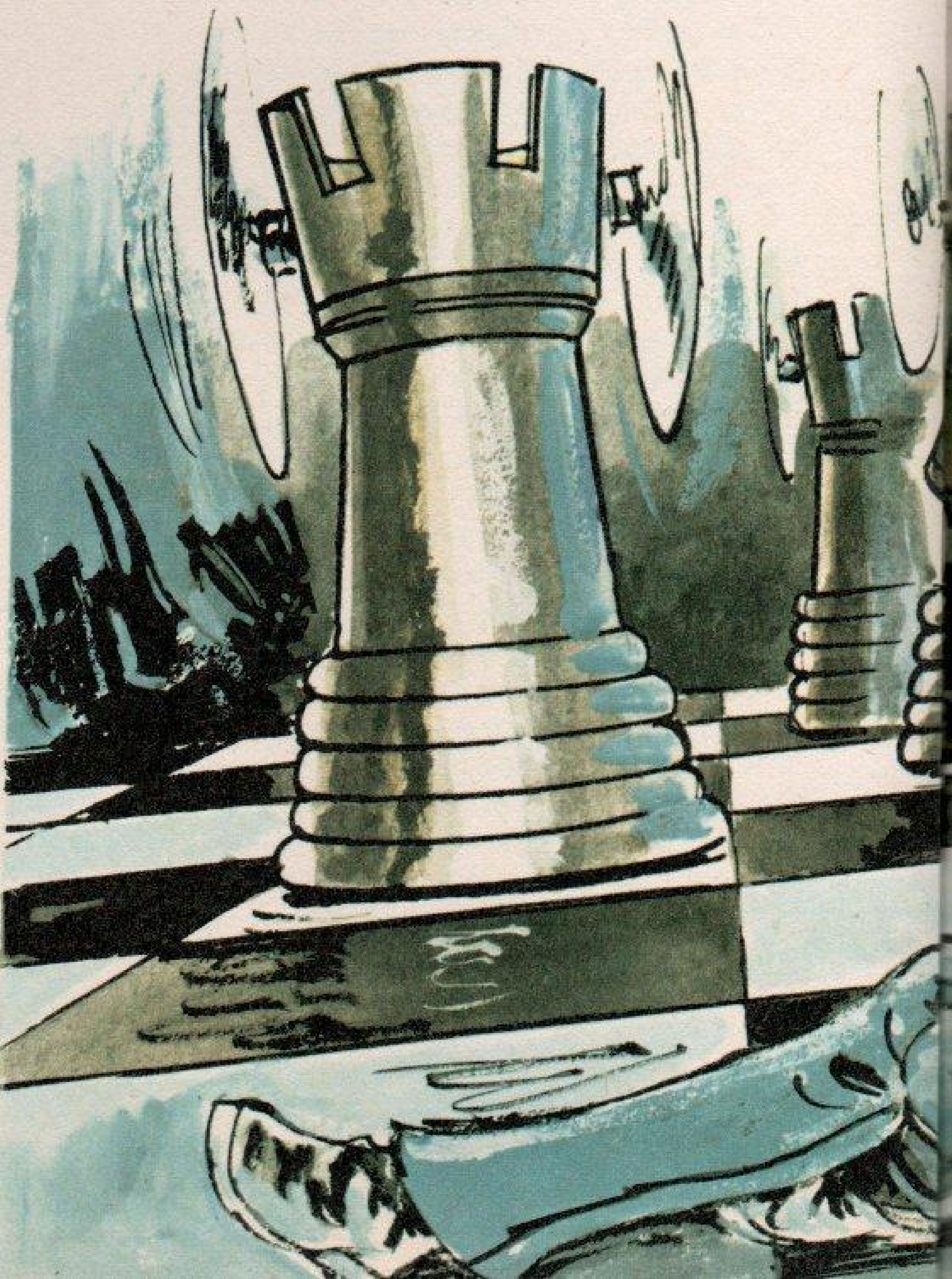
"That's it! That room we past through, the one where nothing happened! That must be the way back. Don't you see? The two *mirrors!*"

The Doctor snapped his fingers.

"Of course! Jo, get back to the lift!" urged the Doctor, then turned to the computer.

"What is your function?" asked the Doctor simply.

"To capture species from other planets and set them numerous tests."



"If they fail," interrogated the Time Lord.

"If, during one of the games, they sustain damage and cease to function, their bodies are returned to their own worlds, death by natural causes being established . . . after they have been processed."

"Processed?" enquired the Doctor.

"All knowledge of tests of skill and strength are collected and stored from their intelligence organs, for future reference."

The Doctor rubbed the back of his neck thoughtfully.

"You mean you collect as much information as possible about the games and trials of the inhabitant of that particular planet and test them out on a chosen subject?"

"That is correct," whirred the machine.

"Very well," announced the Time Lord. "Try this."

The Doctor looked back at Jo who stood on the elevator square then returned his gaze to the computer.

"Checkmate at three dimensional chess in six moves."·

The computer whirred for a few seconds then grated "It is illogical. It cannot be done."

The Doctor smiled slyly. "Oh, yes it can."

The machine whirred again, and this time the Doctor could hear that the noise had increased in tone considerably.

"It . . . cannot be done," repeated the machine.

Its voice was higher, thought Jo, but put it down to imagination.

"Checkmate in six moves!" shouted the Doctor.

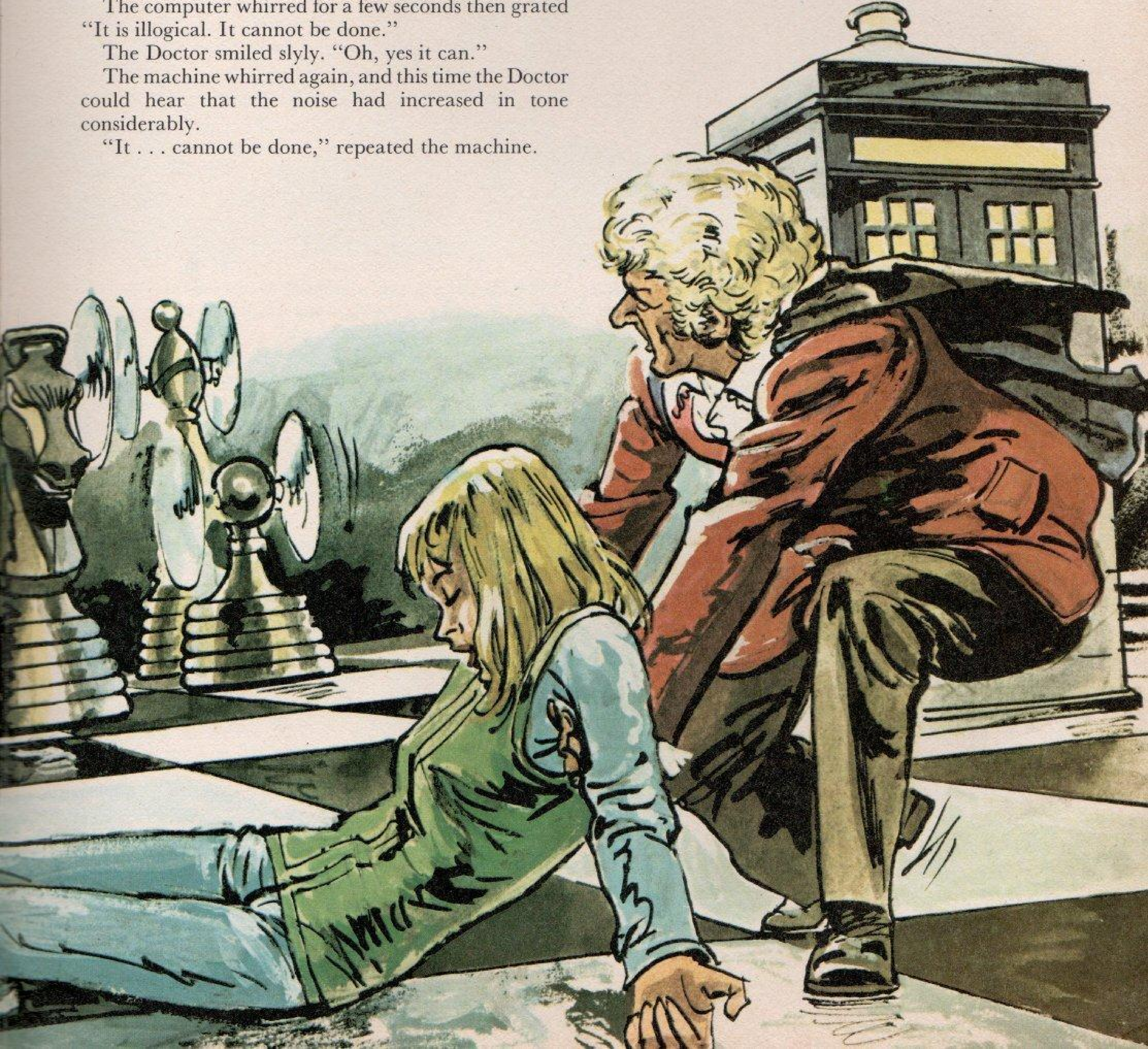
The viewscreen on the computer glowed a blood red as the whirring continued to rise in pitch. The Doctor hurried over to Jo and stood beside her on the platform.

"Six moves!" repeated the Doctor as the elevator began to descend. His last view of the computer showed thin whisps of smoke seeping from beneath the view screen as the computer tape began to spill onto the floor.

"But, Doctor," said Jo, "we'll have to go through that chess set again!"

"No, somehow I think the Jack that built this house is a little preoccupied at the moment."

The conveyor descended with the police box, and the Doctor pushed the doors open stealthily. He peered



into the hall and saw the pawns and pieces spinning furiously around the sides into the safety area, where they disappeared. After a few moments all was silent, and the duo stepped from the box and ran over to the door.

The Doctor wrenched it open and he ushered his female companion into the room of mirrors. By now the high pitched whining of the computer could be heard throughout the entire complex, as the computer battled for a solution to its problem. "Jo!" cried the Doctor over the noise. "Search around the frames of the mirrors for any control studs that might open them up. The door might be behind them!"

Jo Grant's fingers fumbled at the sides and found two hinges on the left. She nervously felt around for the control stud at the other side and found it. The floor began to tremble as the Doctor helped her pull back the mirror . . . to reveal a blank wall. The Time Lord smashed his fist against it until his knuckles bled.

"Doctor!" screamed Jo, "This place'll go up at any moment."

The Doctor ceased his futile attack and ran his fingers through his silver hair. The whine of the computer seared through his brain, jumbling up his thoughts so that he couldn't think straight. Then he looked at Jo and saw behind her that the hinges on the other mirror were at the right hand side . . . the *opposite* to the other one. He scrambled over to the glass and heaved it out until it was parallel with its neighbour. The two mirrors shone from yellow to blue as each mirror reflected the other, creating a never ending corridor to eternity.

The Doctor's eyes widened as plaster began to crumble from the ceiling as a large crack shot across the far wall. He stepped between the two mirrors, and found that the corridor wasn't a reflection at all, and that he could pass his hand through the glass as if it wasn't there!

He grabbed Jo by the arm and stepped through the glass as the roof collapsed and a gigantic explosion demolished the two mirrors and the remainder of the complex.

The Doctor and Jo were picked up by some invisible force and hurtled down the vast corridor at incredible speed. Jo then remembered this was how they had been delivered to the house of tests, this was the corridor she had seen before she had passed out.

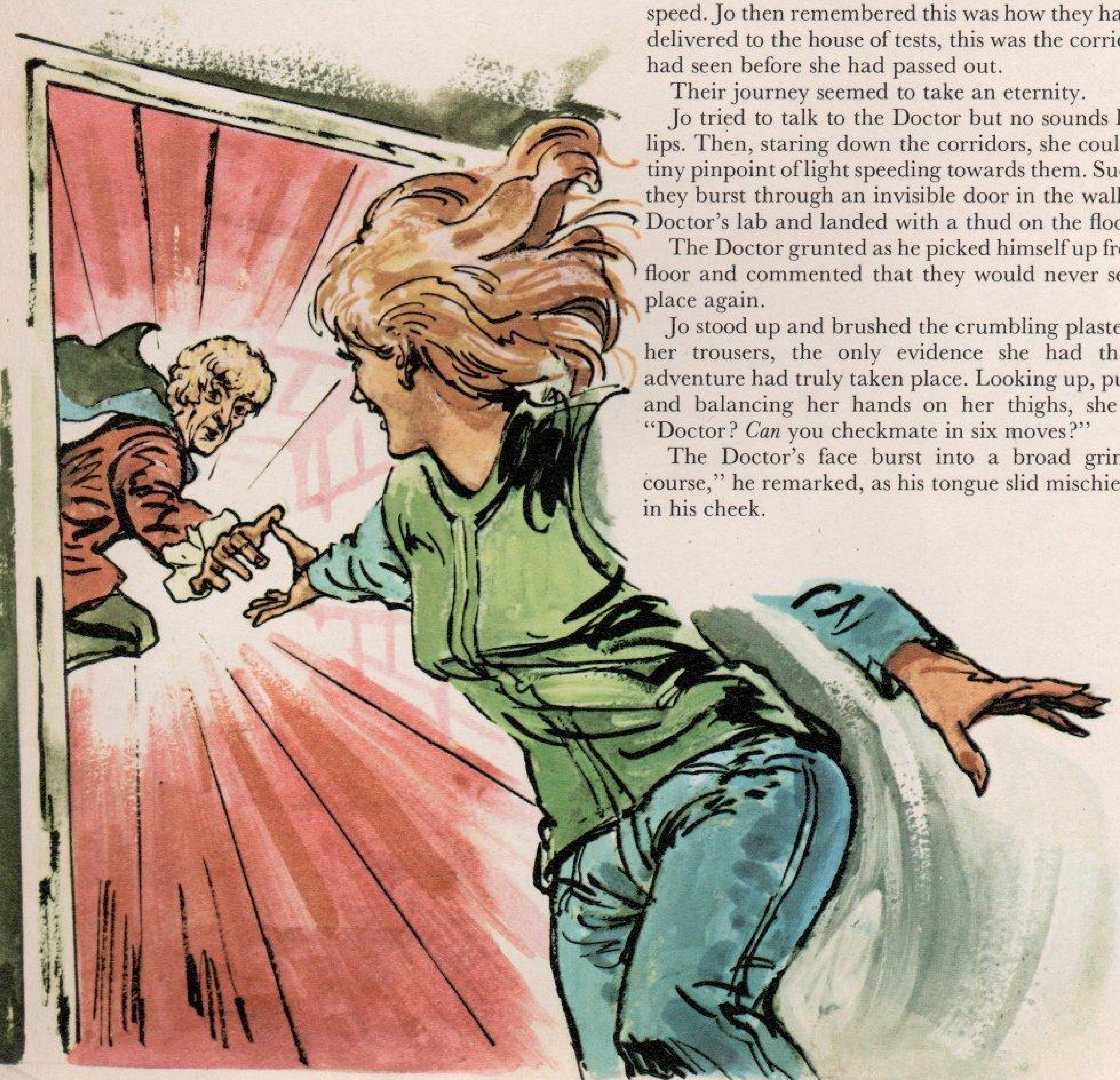
Their journey seemed to take an eternity.

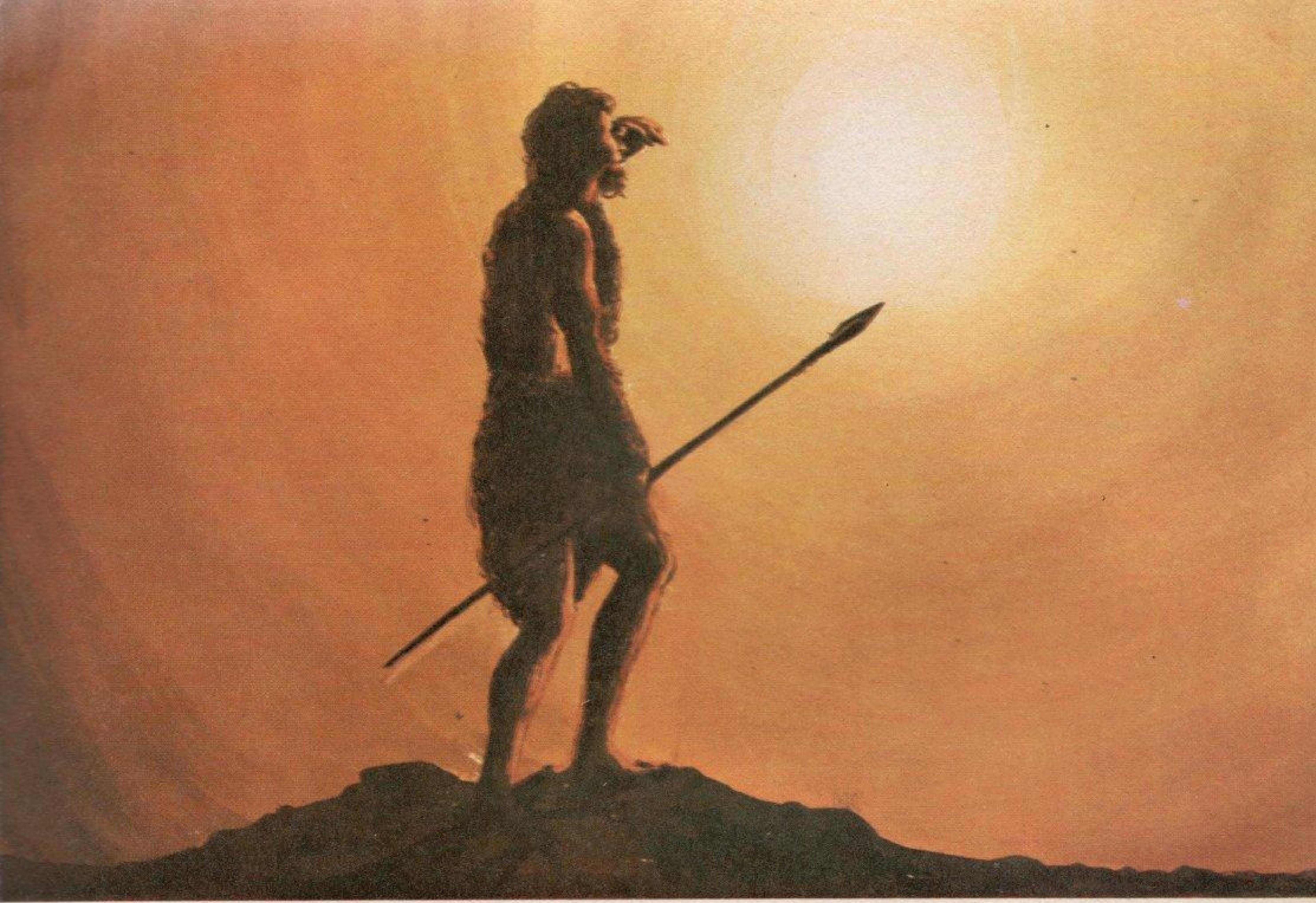
Jo tried to talk to the Doctor but no sounds left her lips. Then, staring down the corridors, she could see a tiny pinpoint of light speeding towards them. Suddenly they burst through an invisible door in the wall of the Doctor's lab and landed with a thud on the floor.

The Doctor grunted as he picked himself up from the floor and commented that they would never see that place again.

Jo stood up and brushed the crumbling plaster from her trousers, the only evidence she had that the adventure had truly taken place. Looking up, puzzled, and balancing her hands on her thighs, she asked "Doctor? *Can* you checkmate in six moves?"

The Doctor's face burst into a broad grin. "Of course," he remarked, as his tongue slid mischievously in his cheek.





# our SPECTACULAR sun

All through the centuries man has worshipped the great glowing star at the centre of our galaxy – the sun. Primitive man knew nothing of physics or astronomy, yet he understood that it was the sun which gave light and warmth to the earth, and helped his crops to grow each year in the fields.

The Sun is a source of tremendous light and heat, and it also gives us some of the most spectacular phenomenons in our sky. Glorious sunsets, slowly breaking dawns, colourful rainbows formed by the sun's rays falling on tiny droplets of moisture in the air, and dramatic solar eclipses.

Primitive man watched all these phenomena, and some of them must have startled and worried him. Nowadays we can analyse them with the help of scientific knowledge and instruments, but they are still just as spectacular and exciting to watch.

## SUN STATISTICS

The sun's diameter is 864,000 miles, and 335,000 billion cubic miles of gases are contained in its interior. Scientists have studied the sun in such great detail that they have been able to calculate the density, temperature, and composition of these gases, and understand the nuclear processes which make them burn. We are now able even to duplicate these processes in laboratories on earth.

In the sun's core, hydrogen atoms are fused into helium, at the almost incredible temperature of 14 million degrees centigrade. The resultant energy, released as powerful gamma rays, thrusts outwards, bombarding areas of densely-packed gas atoms.

These collisions convert the gamma rays into other, slower rays, such as x-rays and ultraviolet waves. The energy pours through the sun's surface skin, or *photosphere*, and through the first part of the sun's double atmosphere, the inner atmosphere. It travels the 36 million miles to the sun's second layer of atmosphere, the outer atmosphere, and breaks through this to continue on its journey to the planets.

That energy travels another 93 million miles before we receive it, for that is the distance

between the Earth and the Sun.

From time to time, parts of the sun's surface erupt in a very spectacular way, rather like a gigantic firework display. This is hardly surprising when you remember that the temperature on the surface is over 5,000 degrees centigrade, and the sun itself is like a huge cauldron of atomic particles and hot gases, fusing and burning together at incredible temperatures.

The smallest of the sun's familiar eruptions, which scientists have studied, are called spicules. These last only about five minutes, and rise a mere few thousand miles.

Spicules are very small eruptions indeed when compared with the impressive 'loop prominences' which occur from time to time. These may last for many hours, and they form a fantastic loop or arch stretching into space.

Loop prominences are often hundreds of thousands of miles in length, and one in particular, recorded in June 1946, stretched nearly a million miles into space.

The Sun is the centre of our galaxy, and on it all life on Earth depends. Primitive man was fascinated by its changing face and moods, and it remains just as fascinating to us today, now that scientists have discovered some of its amazing secrets.

# UP IN SPACE

How good is your knowledge of space? Here is your chance to find out. You may not be much of an expert like Dr Who, but you can still be well-informed on the subject. Award yourself three points for every correct answer.

1 Which is the hottest of the major planets?

2 Which is the coldest of the major planets?

3 Which is the only planet with a single satellite?

4 Which is the brightest star in the heavens?

5 Excepting the case of the Sun, which is the nearest star to the Earth?

6 What are super-novae?

7 Where and when did the rocket originate?

8 Who was the first person to leave an artificial satellite during orbit?

9 Who was the first man undisputedly known to have died during space flight?

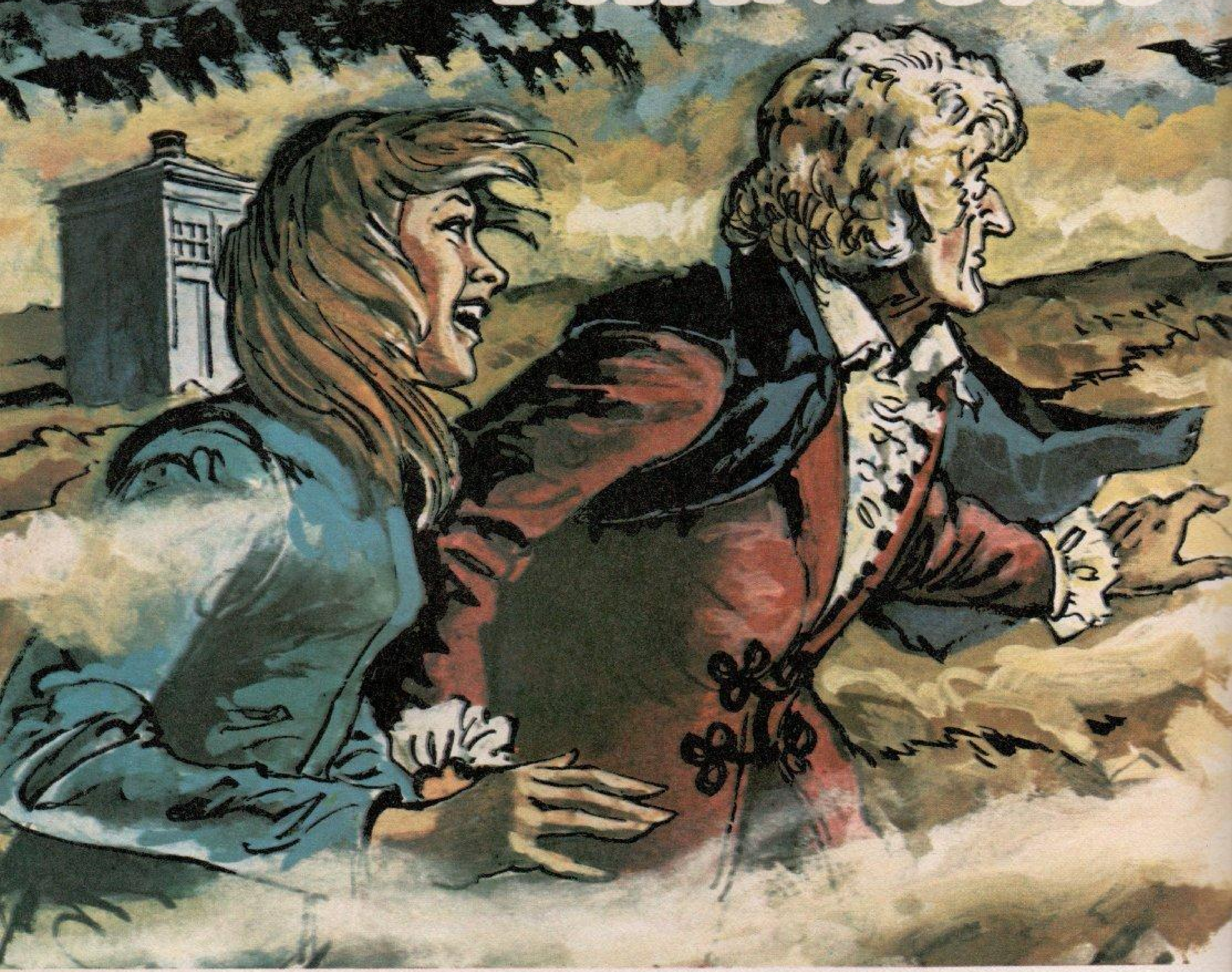
10 Where is the largest telescope in the world situated?

**ANSWERS**

1 Mercury.
2 Pluto.
3 The Earth.
4 Sirius A, also known as the Dog Star.
5 Proxima Centauri, which is 4·3 light-years (25,000,000,000,000 miles) away.
6 Temporary 'stars' which flare and then fade, and which occur perhaps five times in 1,000 years.
7 The origin of the rocket dates from war rockets propelled by a charcoal-saltpetre-sulphur gunpowder, made by the Chinese as early as about 1100.
8 Lt.Col. Alexei Leonov, of the Soviet Union, who left Woschod 2 on 18th March 1965.
9 Col. Vladimir Komarov, of the Soviet Union, who was launched in Soyuz 1 on 23rd April 1967. The spacecraft was in orbit for about 25 hours, but he died during the descent to the ground.
10 At the Mount Palomar Observatory in California. This extraordinary instrument, 200 inches in diameter, allows us to see nebulae 500 million light-years away.

If you scored 24 points or more, you may have the makings of a scientist; between 18 and 24 points is still good; anything lower, you either don't care about space lore, or you need to do some reading up on this fascinating subject.

# Revenge of the PHANTOMS



The place was certainly eerie. A thin green mist swirled across the rocky wasteland that stretched ahead of them. Shadows seemed to flit through the patterns made by the mist, briefly appearing and then slipping back into the gloom. A strange dark building stood at the top of a rise. The air was cold and clammy, but what struck the Doctor most of all was the total lack of noise of any kind. The silence was massive, deafening, absolute.

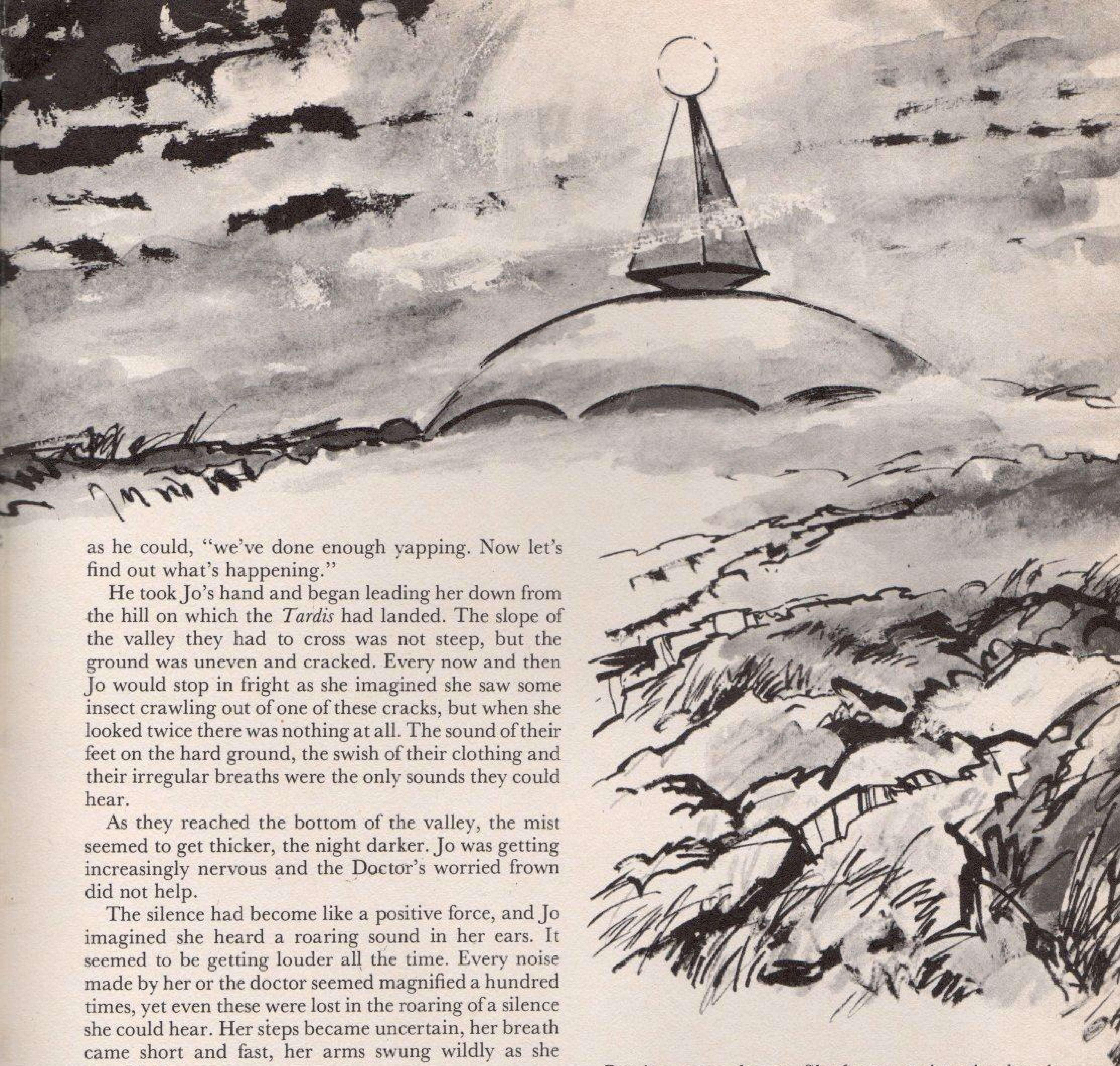
Jo shuddered and held on to Doctor Who's arm.

"It's so weird," she whispered quietly, as if frightened her voice might waken some slumbering evil. "I feel like I'm being watched, and yet it's as if the whole planet was dead."

"But it can't be, remember?" said the Doctor reassuringly, "those signals we heard must have come from somewhere. There's somebody in need of help on this planet, and my guess is that whoever it is lives in that building over there."

He stretched out his arm and pointed to the strange building that lay some two miles from where they stood. It was a large dome, colourless and uninviting. A tower reached up from its middle, wide at the bottom, tapering as it rose to the globe that rested on top. The globe was small but gave off a faint light, changing colour by the minute, glowing silently, powered by some erratic energy.

"Well," said the Doctor, adopting as cheerful a voice



as he could, "we've done enough yapping. Now let's find out what's happening."

He took Jo's hand and began leading her down from the hill on which the *Tardis* had landed. The slope of the valley they had to cross was not steep, but the ground was uneven and cracked. Every now and then Jo would stop in fright as she imagined she saw some insect crawling out of one of these cracks, but when she looked twice there was nothing at all. The sound of their feet on the hard ground, the swish of their clothing and their irregular breaths were the only sounds they could hear.

As they reached the bottom of the valley, the mist seemed to get thicker, the night darker. Jo was getting increasingly nervous and the Doctor's worried frown did not help.

The silence had become like a positive force, and Jo imagined she heard a roaring sound in her ears. It seemed to be getting louder all the time. Every noise made by her or the doctor seemed magnified a hundred times, yet even these were lost in the roaring of a silence she could hear. Her steps became uncertain, her breath came short and fast, her arms swung wildly as she stumbled.

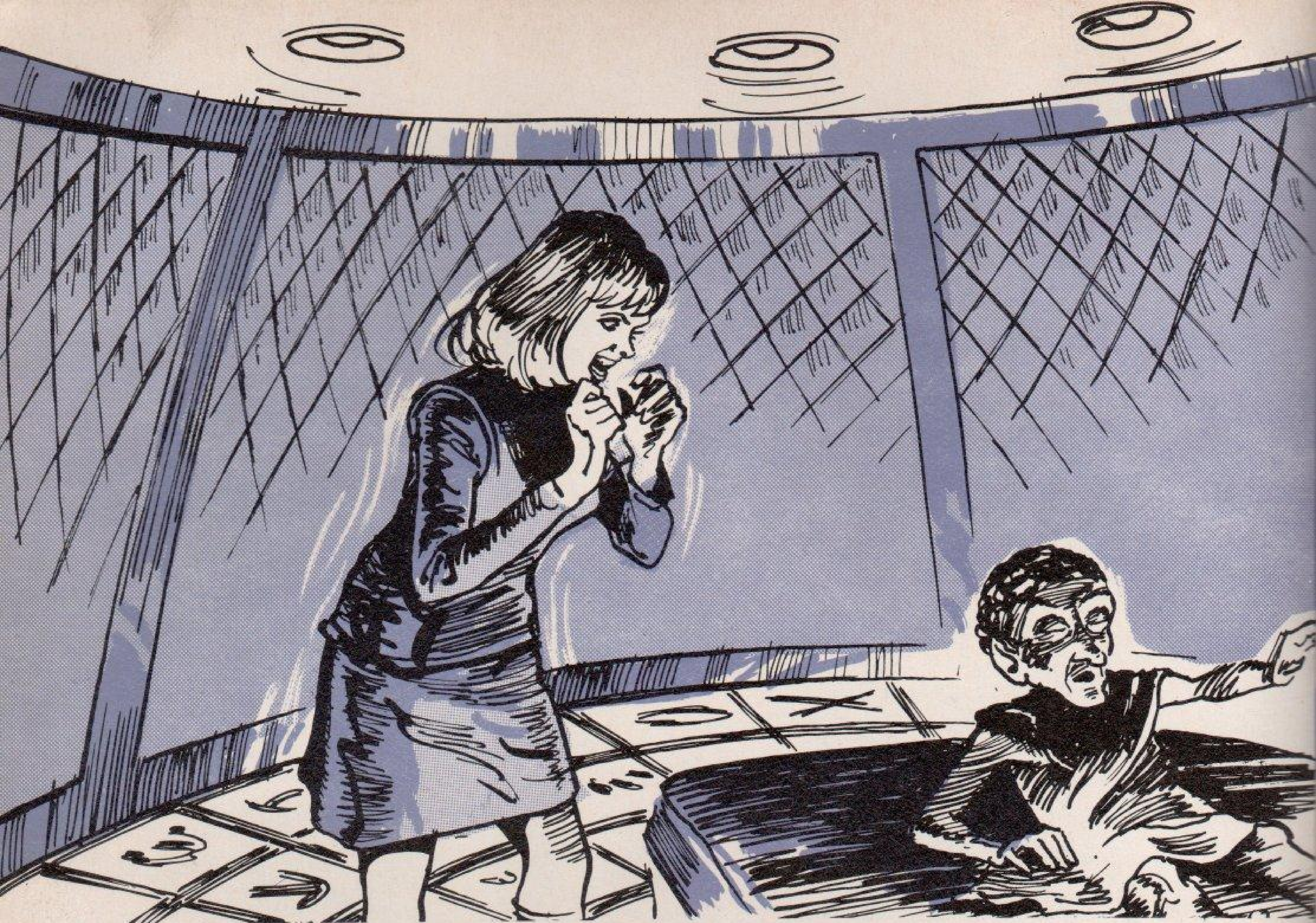
As she staggered forwards, the Doctor walked steadily on, almost dragging her after him. Now and then he would mutter some words of comfort, but his voice seemed soft and remote. Jo heard the sounds but they had no meaning for her. It was as if she was going mad. Her wild eyes now picked out new shapes in the mist. Shadows, strange and misshapen, some humanoid, some distinctly and grotesquely otherwise. The sound of the Doctor's voice hummed against the clatter of her feet on the stony ground, the feeling of oppression consumed her. She felt the shadows were after her, that they wanted her, that they were trying to stop her with their mute and desperate demands.

Her face was red and she felt hot, and she shook herself convulsively, as if trying to wake up from some stifling anxiety dream.

But it was no dream. She began to imagine hands touching her, tugging at her clothing, restraining her from going on. The shadows grew more numerous, looming up in front of her face and then passing on, only to be replaced by another. Her every sense tingled. She was acutely aware of every nerve in her body. As the shadowy figures loomed closer she began to imagine she could hear them. As the dark shapes confronted her she imagined she could hear tiny cries, lost, desolate, beyond despair. Then as they flashed by her she imagined she heard her name, quietly at first, distorted by psychic hunger, and then louder, louder and louder.

"Jo," said the voices, "stay with us, Jo, we need you. Jo, stay. Jo, stay. Jo! JO! JOOOOOO! JOOOOO!"

The shrieks filled her whole being. They became hysterical. It was no longer just her name, but wild, violent insane noises. She had never even imagined



such terrible sounds existed. It was as if her presence had awakened the shadows from their abject sleep, as if her being alive sparked off recognition in them of some hopeless, lonely cosmic agony. Jo put her hands to her ears and screamed.

"Jo!" yelled the Doctor, trying to pull her on up the slope that led up to the house. "Jo! Keep moving! Don't stop or you'll lose control!"

But Jo just kept on screaming, again and again, as loudly as she could, releasing all her pent up and frightened emotions, trying desperately to drown the sounds in her head. The Doctor slapped her hard across the face, and then dragged her to the top of the rise as she mumbled to herself, stunned, dazed and amazed.

At the top of the slope they saw that the building was much larger than it had looked from the opposite side of the valley. It was made out of what seemed to be metal, dull and without lustre, and yet delicately shaded with demonic shapes. That anyone lived there seemed unlikely, that anyone should want to live there seemed impossible. The Doctor found a door and they went inside.

The moment they entered the building Jo seemed to wake up. They were in a large empty room, and there were paintings on the wall showing various different life forms similar to the shadows Jo had observed in the mist. The paintings were beautifully executed, each one the work of tens of years. The detail was so precise as to defy the imagination, the textures so varied and the lines so sure and strong, that it seemed that whoever painted them had somehow acquired the experience of all the painters in the universe.

Yet one thing remained constant in all the pictures – the look in the eyes. Though the size and shape differed from one creature to another, there was the same deathless stare, the same lunatic determination in them all. There were thousands and thousands of these paintings on the walls and the same eyes stared from every one.

The Doctor felt uneasy. No one person could have painted all these, and yet it was obvious they had all come from the same source. What technique could have produced so many wonders? The Doctor took Jo's hand and led her to a door at the base of the tower in the middle of the room.

Inside the tower, the Doctor's uneasiness increased. Jo, who had managed to free herself from the noises in her brain, found a new fear replacing them. They went slowly up the steps, higher and higher until they came to a landing, crammed full of tiny sculptures showing the same master craftsman's touch, the same obsessive detail to the eyes.

They went further and further up the tower, each floor being filled with careful treasures of some kind or other. Symbols, carvings, tapestries, all of them well maintained, as if being kept in readiness for some ultimate purpose. Jo fell increasingly silent and her face grew taut. Dr. Who, at once both fascinated and repelled by the works of art, stopped now and then to inspect one closely.

But it would have taken a hundred lifetimes to give just a few of the creations the attention they deserved, and Dr. Who kept on up the stairs until finally he came to a door that led into the globe they had seen from across the valley.

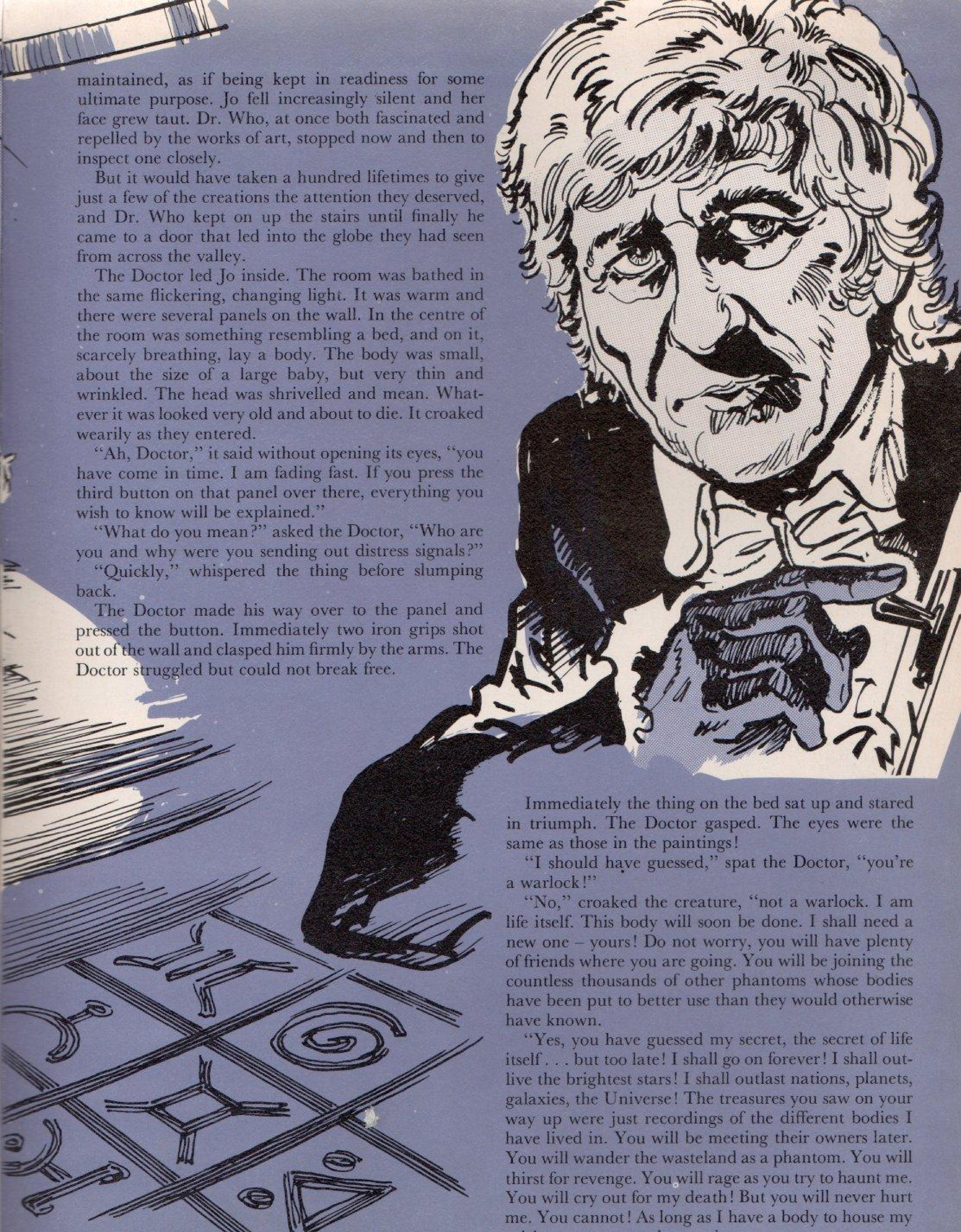
The Doctor led Jo inside. The room was bathed in the same flickering, changing light. It was warm and there were several panels on the wall. In the centre of the room was something resembling a bed, and on it, scarcely breathing, lay a body. The body was small, about the size of a large baby, but very thin and wrinkled. The head was shrivelled and mean. Whatever it was looked very old and about to die. It croaked wearily as they entered.

"Ah, Doctor," it said without opening its eyes, "you have come in time. I am fading fast. If you press the third button on that panel over there, everything you wish to know will be explained."

"What do you mean?" asked the Doctor, "Who are you and why were you sending out distress signals?"

"Quickly," whispered the thing before slumping back.

The Doctor made his way over to the panel and pressed the button. Immediately two iron grips shot out of the wall and clasped him firmly by the arms. The Doctor struggled but could not break free.



Immediately the thing on the bed sat up and stared in triumph. The Doctor gasped. The eyes were the same as those in the paintings!

"I should have guessed," spat the Doctor, "you're a warlock!"

"No," croaked the creature, "not a warlock. I am life itself. This body will soon be done. I shall need a new one – yours! Do not worry, you will have plenty of friends where you are going. You will be joining the countless thousands of other phantoms whose bodies have been put to better use than they would otherwise have known.

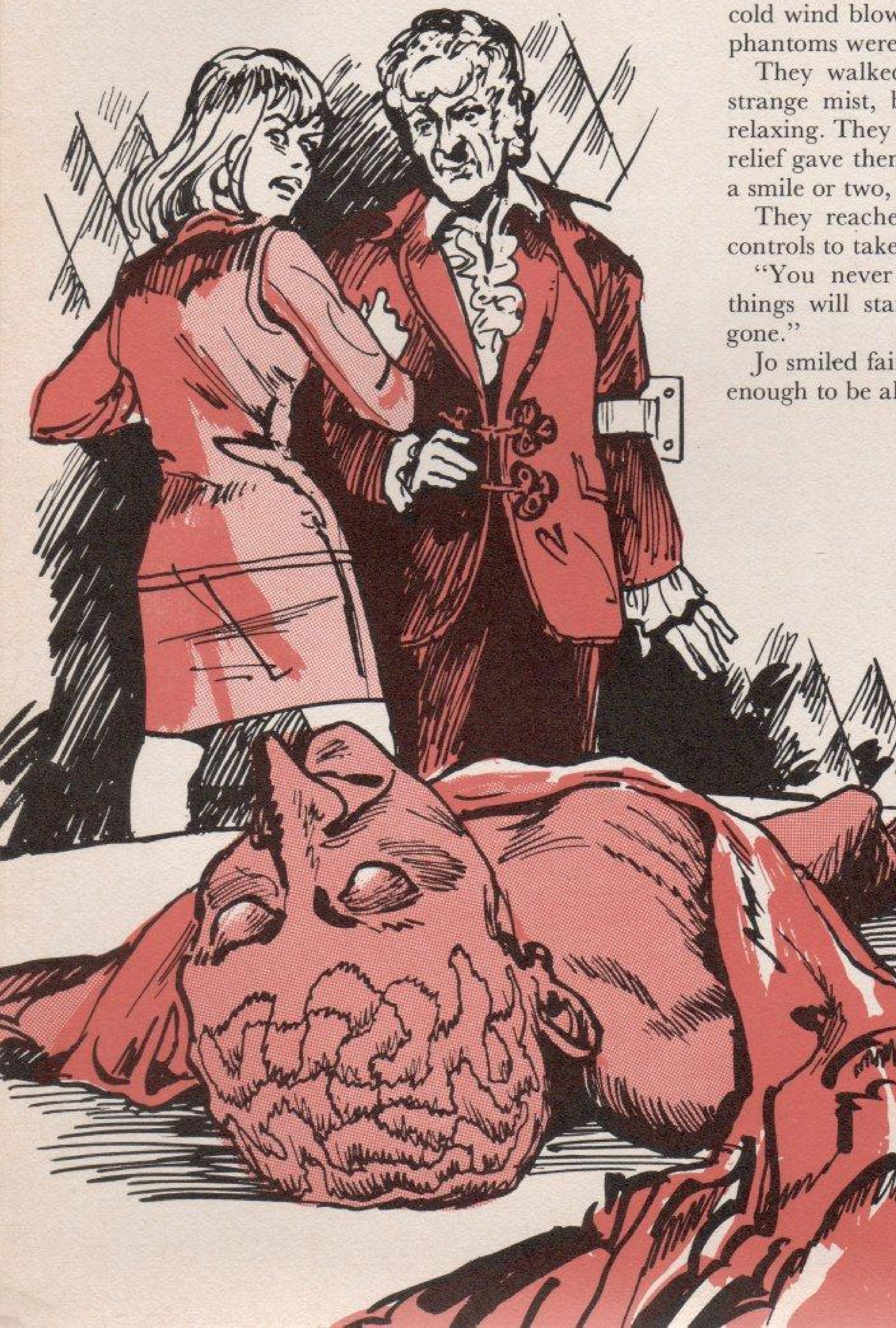
"Yes, you have guessed my secret, the secret of life itself . . . but too late! I shall go on forever! I shall outlive the brightest stars! I shall outlast nations, planets, galaxies, the Universe! The treasures you saw on your way up were just recordings of the different bodies I have lived in. You will be meeting their owners later. You will wander the wasteland as a phantom. You will thirst for revenge. You will rage as you try to haunt me. You will cry out for my death! But you will never hurt me. You cannot! As long as I have a body to house my spirit you are powerless against me.

"The human life-span is a puny one, but a man in my position cannot be too fussy. There will be others. Many, many, many, many others. What is a million years to someone who plans to live until time itself has stopped! And now," he turned to Jo, who was standing in a trance-like state, "pick up that knife and kill him!"

Jo picked up the knife. Her mind was empty. All she could hear was the quiet soothing voice of the creature, telling her how much she had been wronged, telling her how this cruel tyrant must die, telling her how she should cross the room and plunge the knife into his evil heart!

*No!* The word scorched across her brain like lightning. She looked up and saw the Doctor staring intently at her eyes.

"Kill him, Jo, kill him!" came the creature's voice again. "Stab him, rid us of his odious existence, free his spirit to make way for mine!"



Jo stood as if paralysed. The creature's voice went on and on in her head, yet the Doctor's eyes told her different. "Kill him!" said one. "Think, Jo, think!" said the other.

As the two forces battled for control of her mind, ever more insistently, ever more violently, she suddenly flung away the knife and cried out.

"Stop it! Stop it! Stop it!" She sank slowly to the floor.

The Doctor sighed with relief. The creature croaked wildly. The exertions had proved too much for his enfeebled body.

"No!" he shrieked, "No. Doctor, please don't let me die! The phantoms will get me! Please Doctor, you are pledged to save lives! Save mine! Kill the girl! Save me! Save me!"

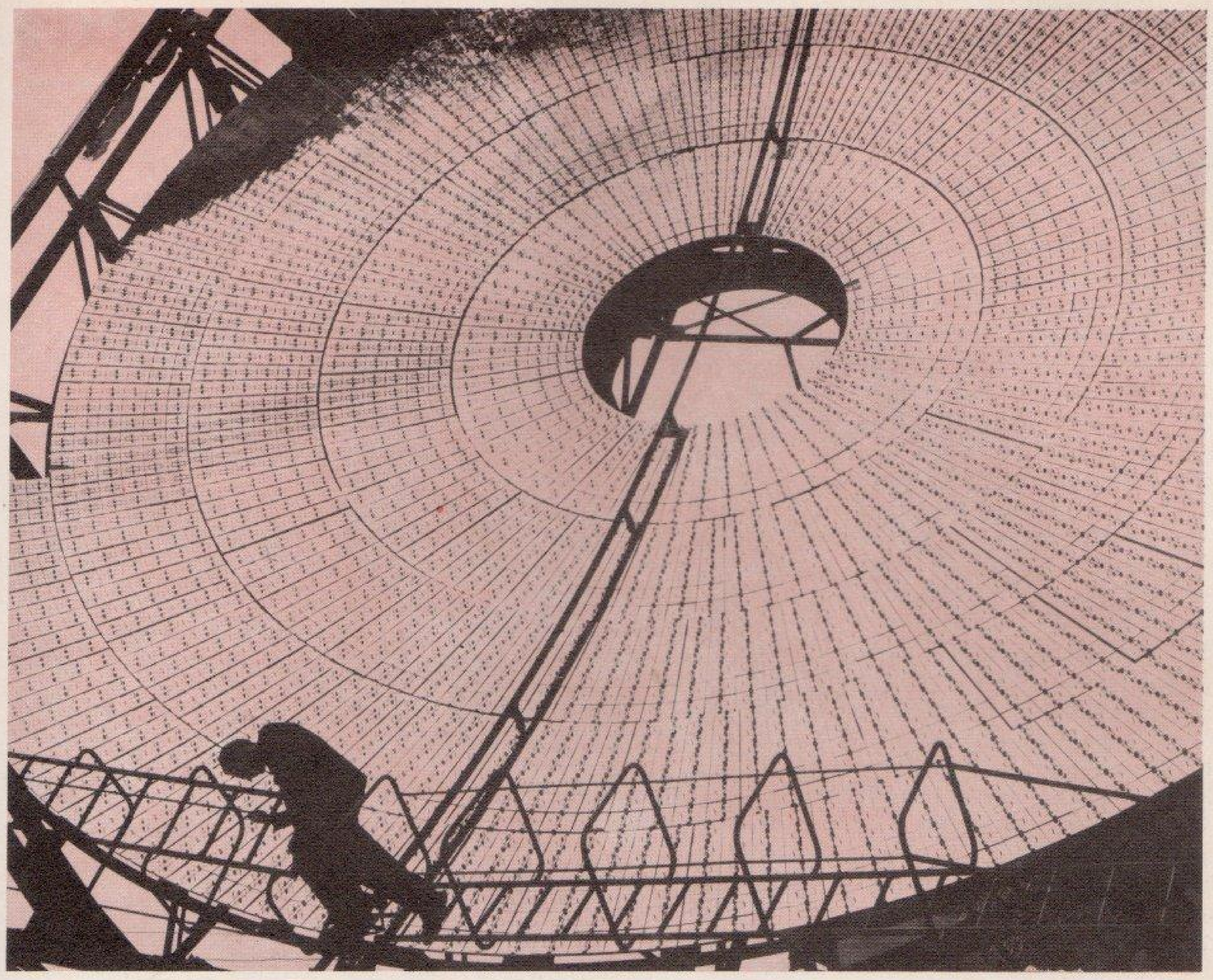
The creature fell lifeless onto the bed, and Jo struggled to her feet and freed the Doctor. As they made their way, shaken, down the stairs they felt a cold wind blowing past them towards the globe. The phantoms were about to take their revenge.

They walked back across the valley through the strange mist, but this time it seemed peaceful and relaxing. They were both tired, but the feeling of utter relief gave them strength. The Doctor even managed a smile or two, but they were not convincing.

They reached the *Tardis* and the Doctor set the controls to take them a long long way away.

"You never know," he said cheerfully, "maybe things will start growing there now that monster's gone."

Jo smiled faintly in answer. She didn't care. It was enough to be alive.



*The Mont Louis Solar Power Station in the Pyrenees. Photo by courtesy of French Government Tourist Office*

# Not just an EMPTY SPACE

Why try to get to the Moon anyway?

Couldn't the money and scientific skill involved in the space programme be put to better use here on Earth?

I wonder how many times you've heard those questions asked. One answer is, of course, that Earth is not a large planet and will not last forever. Already we read in the newspapers of how we are running short of many metals and may soon have entirely exhausted our energy supplies. It is imperative, therefore, that we start exploring the resources of our neighbours. Now.

Dealing with metals first; spinning around the sun between the orbits of Mars and Jupiter is the massive Asteroid Belt, the largest open mine in the whole Solar System. The asteroids – some of which are 450 miles in diameter, others only a few centimetres – are thought to contain similar mineral wealth to Earth and, with the correct vehicles and equipment, this should be comparatively simple to exploit since there is no top covering of soil, or fiery core which would prevent deep tunnelling.

Once mined, there should again be little trouble in moving the riches, for in space all things are weightless. The asteroids exert only a very slight gravity-pull, so a shove in the right direction should be all that's needed to propel the materials into an awaiting orbital workshop.

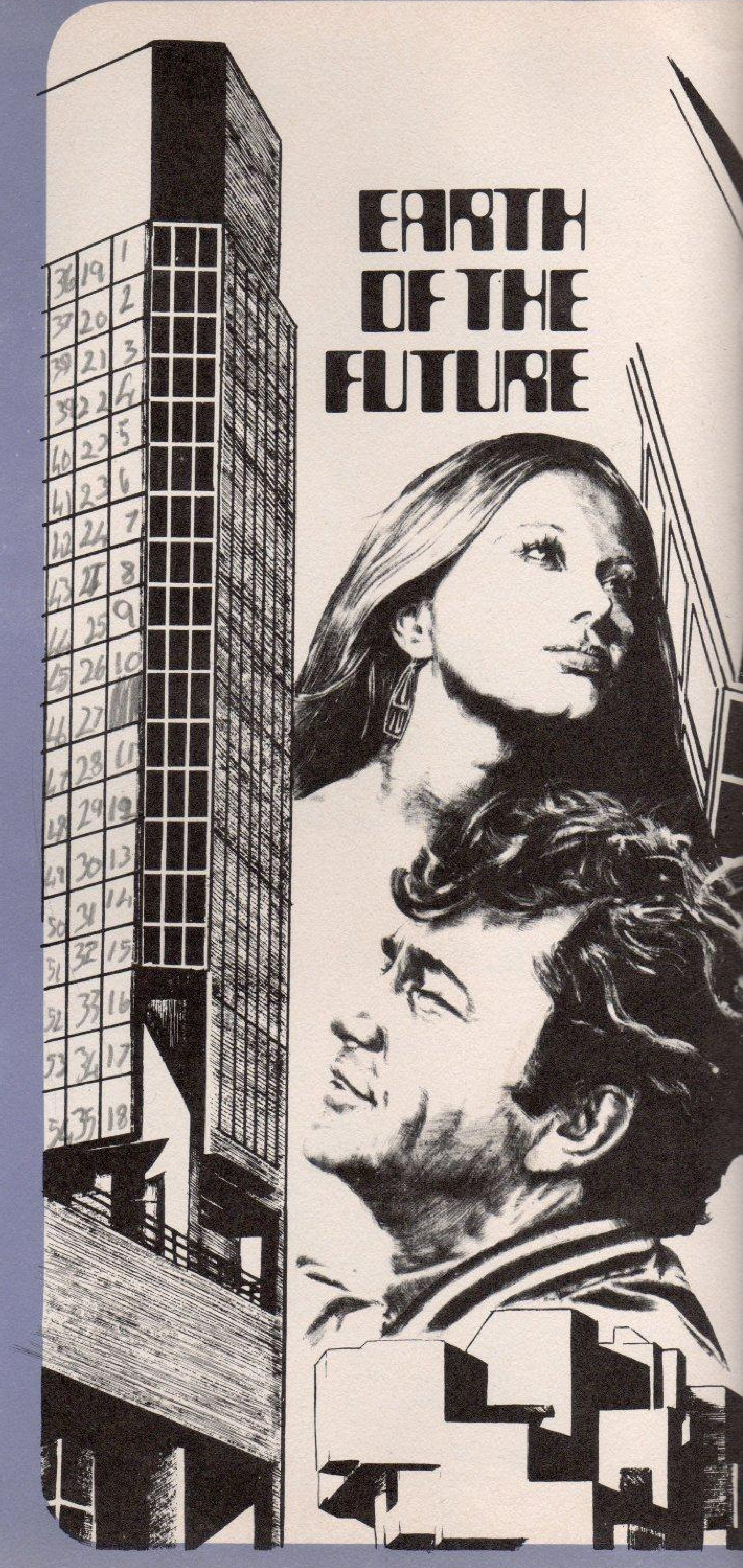
The first of these space factories – of which the American Skylab and Russian Salyut One were small-scale examples – will probably initially have to be powered by nuclear means. This is a handy form of energy certainly, but unfortunately dangerous too: already on Earth we are beginning to experience great difficulties in safely disposing of the radioactive waste from this method. Here again, space can help us out – with clean, uncontaminated Solar Energy.

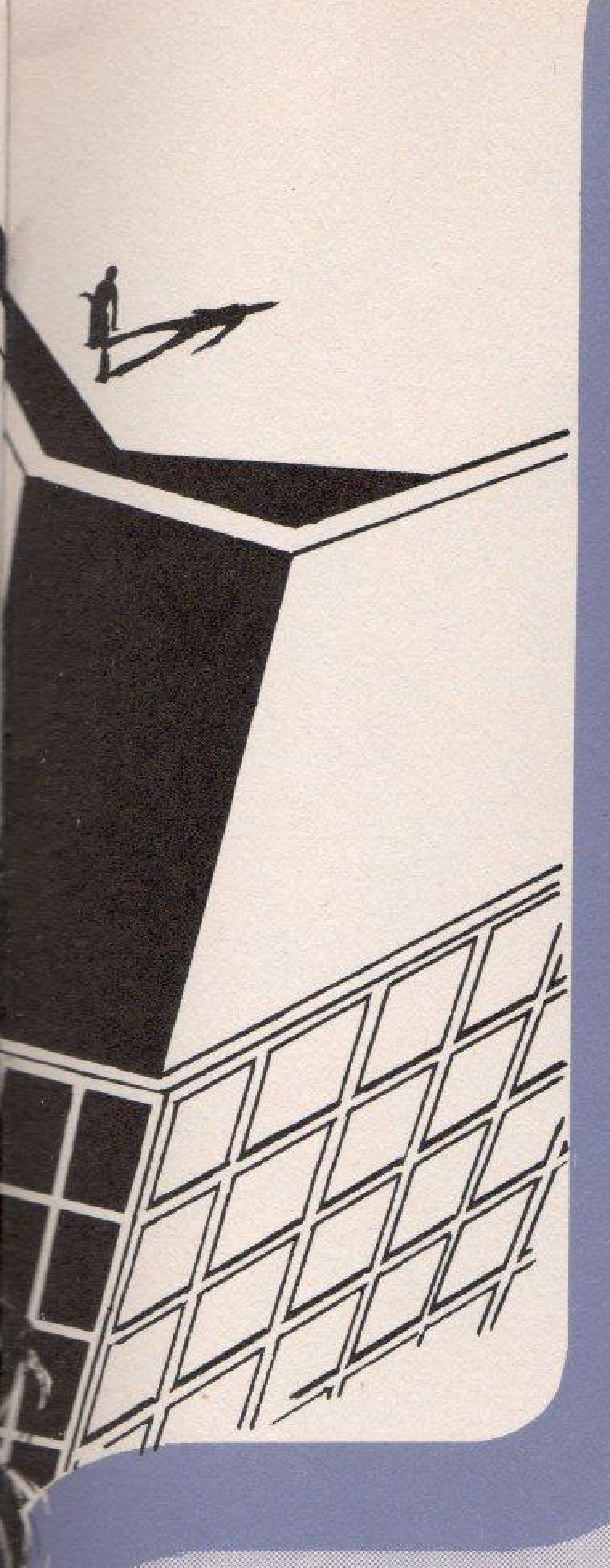
High on the slopes of the French Pyrenees stands one solar energy system, the Mont Louis Power Station. Line upon line of enormous, movable mirrors follow the sun and reflect its light onto an even larger, curved mirror opposite. The combined beams of all these secondary mirrors leap back in a gigantic glare from the main mirror, burning deep into a solar furnace.

The remarkable temperature of 4,000 degrees Centigrade has been recorded at this furnace, but unfortunately cloudy weather prevents it reaching its top capacity for almost one-third of the year. In space, however, such a system could operate uninterrupted in the full glare of the sun and, of course, beyond the pull of gravity, mirrors as large as fields could be constructed, unhampered by any problem of weight, to provide continual power for the orbiting workshops.

Seen this way, then, the space programme is a real investment for our future. When Earth's supplies are depleted still more, it's comforting to know we might well be able to manufacture a whole range of products in our orbital factories purely from the resources of space.

# EARTH OF THE FUTURE





By the 21st century the strange sights that greet Dr. Who's eyes on other planets may well be rivalled by the sights to be seen on planet Earth. Futurologists are predicting great changes, not the least of which is the concept of a 'city within a building'! Just imagine, your home, your school, the shops—all in one enormous skyscraper.

Engineer and architects are confident, even today, that skyscrapers two miles high will be the only acceptable buildings of the future, as the human race increases and land on which to build becomes scarce.

But, of course, such buildings would present special problems even after the architectural and constructional difficulties had been solved. On a much smaller scale such problems had to be solved when the Empire State building was built and it's only a quarter of a mile high. Ten thousand people work in the Empire State building, in shops and offices, spread over some eighty floors, and that means a lot of lifts. But even with lifts there are still problems; catch an 'express' and everything's fine, but if you happen to want the eightieth floor and you're stuck with an ordinary lift that stops at every floor it could take you half an hour to reach your destination!

### LIVING IN THE CLOUDS

So what of the giants of the future? Architects reckon that such buildings will house in the region of 240,000 people, spread out over 500 floors! Each floor would have about 160 flats encircling an area the size of a town square and, of course, there would be the lifts . . . long rows of them, some 'locals', to take you say, half-way, perhaps to the shopping area; some 'express', in which you'd zoom at lightning speed down to the ground floor.

But, of course, apart from the five hundred floors above ground, there would be a good deal going on underground too. It is thought that each block will have about fifty floors underground to house the maintenance staff and some of the equipment needed to keep such a complex running smoothly. After all when you think of all the equipment needed to keep the smallest of towns working you'll realise the sort of planning that such a skyscraper might need. It might even have its own telephone exchange, sewage disposal plant, generating plant, post office, etc., etc. The list could be endless.

But apart from these mundane everyday problems which would occur to anyone if they thought about it for long enough, there are many more complicated ones which only the experts will be able to solve. . . .

For a start, the top parts of such buildings will probably need a helicopter crew to finish construction—you just don't get cranes two miles high! And then there's the fact that high buildings sway in the wind—ask anyone who lives in a New York skyscraper, even these 'tiny tots' suffer from this problem. So what's it going to be like when you're two miles up in the sky and there's a gale force wind blowing? I would imagine it would be something like being on board a ship on a very rough sea!

But the experts are sure that they've solved this problem too, with the use of giant gyroscopes: enormous wheels driven round at great speeds by powerful electric motors. And they could even be silent, if some work that scientists are doing at the moment is successful. They're looking for metals which will be as strong as steel but as silent as lead! Mmmm, sounds impossible, doesn't it? But, you see, some metals are strong but noisy, and others are silent but soft, that is, they're not very hard-wearing. And if the scientists are successful, it's going to be a much quieter world in the future, engines and other machinery will be practically silent. Just imagine, cars that don't make any noise at all. . . .

Yes, the 21st century looks like being a stunner. Pity it's such a long way off. . . . But still, who knows, at the present rate of progress we're certainly going to see a lot of interesting things ourselves, and I, for one, am not sure that I'd like to live two miles up in the air. Or under the sea, as other futurologists are predicting . . . but that's another story.

# IN THE FUTURE

Dr. Who is always glad to hear of inventions or suggestions for the future which will help the fight against crime or aid humanity towards a better life.

## DIAMOND FINGERPRINTS

In the future it is going to be much more difficult for thieves to sell stolen diamonds because some clever Japanese scientists have discovered a way of 'fingerprinting' the facets in the pattern of individual diamonds. They plan to compile a book of 'fingerprints' of internationally famous stones, so that these would be instantly recognisable if they were ever put up for sale by jewel thieves.

## A CRIME-SCENTED SMELL

American scientists are trying to perfect a small machine for measuring and recording body smells so that in the future the information on this machine may be used, like fingerprints, for tracking down a criminal.

This machine would be taken down to the scene of a crime where it would then be activated so that it would pick up any smells there.

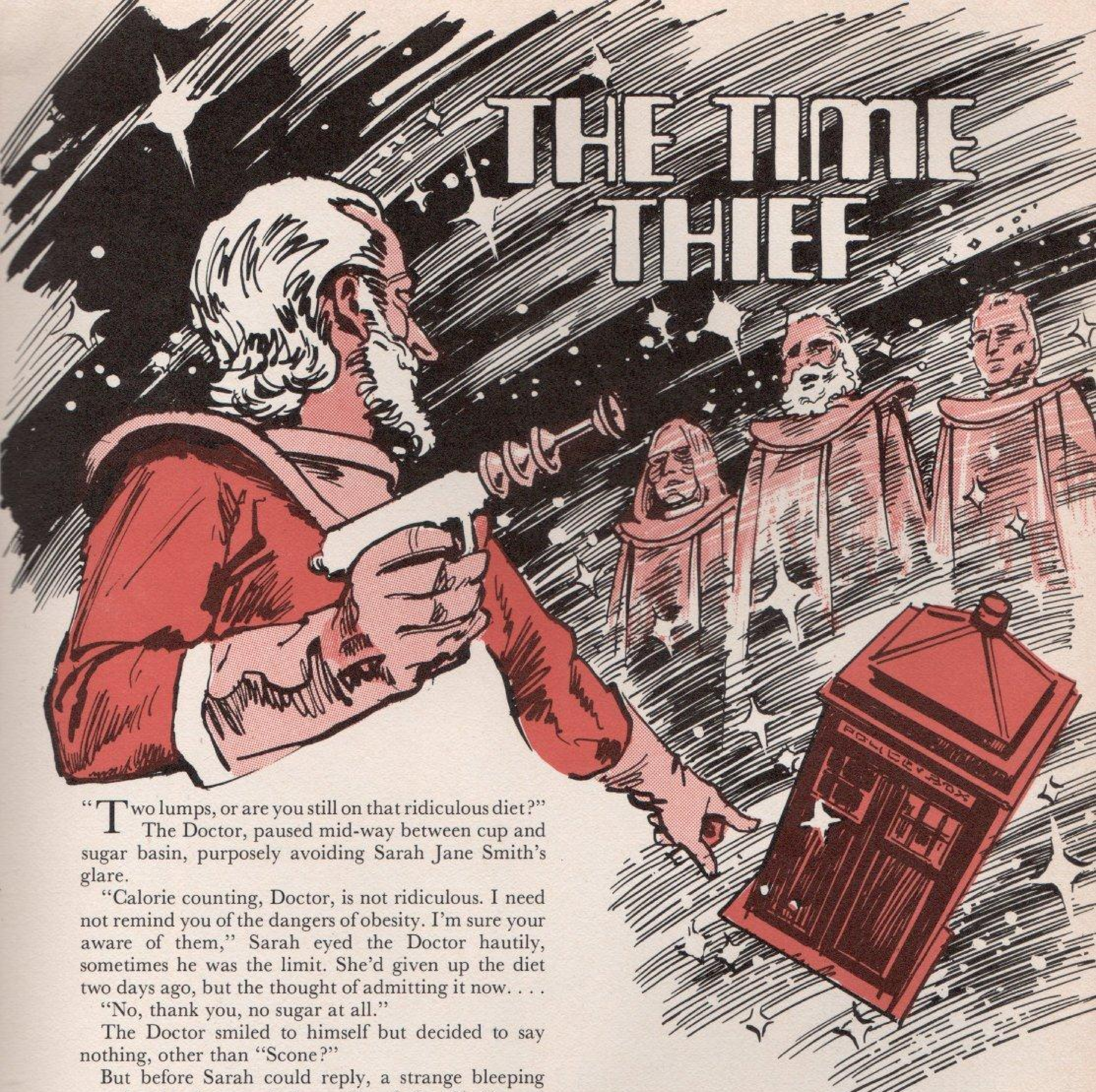
Later, a suspected criminal would be subjected to a test whereby he was put into a purified air-room. The smells surrounding him would then be caught and analysed, and if they were the same as those in the smell machine the man would certainly have to produce a very good alibi to get himself off the hook . . . or should it be to throw the police off the scent?

## THEY'LL HAVE IT TAPED!

In this day and age, when doctors are extremely busy and they are often unable to treat a patient who requires daily medication at home, it has now become the practice to allow patients to treat themselves if they need say insulin injections or a complicated pattern of daily pills.

But some patients cannot always remember the doctors instructions, and so, to prevent any serious mistakes, taped instructions can be heard either in the surgery or at home until the patient is absolutely certain of the course of treatment he is to take . . . getting his illness taped, in fact!

# THE TIME THIEF



"Two lumps, or are you still on that ridiculous diet?" The Doctor, paused mid-way between cup and sugar basin, purposely avoiding Sarah Jane Smith's glare.

"Calorie counting, Doctor, is not ridiculous. I need not remind you of the dangers of obesity. I'm sure your aware of them," Sarah eyed the Doctor hautily, sometimes he was the limit. She'd given up the diet two days ago, but the thought of admitting it now. . . .

"No, thank you, no sugar at all."

The Doctor smiled to himself but decided to say nothing, other than "Scone?"

But before Sarah could reply, a strange bleeping sound echoed around the walls of the *Tardis* and suddenly afternoon tea was completely forgotten.

For a moment the Doctor looked startled, and then he murmured: "Strange, very strange, in fact *most* unusual. This is the first time it's ever happened . . . er, excuse me a moment, would you, my dear?"

As Sarah looked on in amazed silence, the Doctor hurriedly pressed a button on the control fascia. Immediately, a panel, just large enough for him to pass through, opened. In a second he had passed into the room beyond and the panel had closed again. Sarah barely had time to gasp. But she'd known the Doctor long enough to know that there would be a perfectly logical reason for his behaviour and that she'd hear it . . . sooner or later.

Meanwhile, behind the panel, the Doctor was in conference with someone on a small audio-visual link screen; they were obviously good friends.

"I'm sorry to have disturbed you, my friend, but, as you well know, only the most important of circumstances would prompt me to do so. . . ."

"Yes, of course," the Doctor replied, smiling. "It's good to see you anyway, Karr, it's been a long time. But tell me, what has prompted this call, my scientist's curiosity can't wait any longer?"

"Yes, of course. I'm calling you because your fellow Time Lords here on Gallifrey think you're the only person who can solve this dilemma, and it's a grave one.

You remember that villain Madrigor, who disappeared without trace after his trial here; well, he's turned up again after all this time and you can be sure he hasn't returned without a purpose . . . we want you to find out what that purpose is."

"Madrigor, h'mmm," the Doctor rubbed his chin thoughtfully, and then became instantly alert as Karr began to tell him of Madrigor's whereabouts. A few more moments and the conversation was at an end: Doctor Who had another assignment.

Sarah looked up in startled surprise as the Doctor reappeared, she'd almost given him up for lost. For a moment or two he was silent, but the look on Sarah's face told him she wasn't going to be fobbed off with any old explanation, he'd have to tell her everything.

He explained about his native planet Gallifrey, about Karr and the other Time Lords and their powers, and finally he came to Madrigor, the villain of the piece.

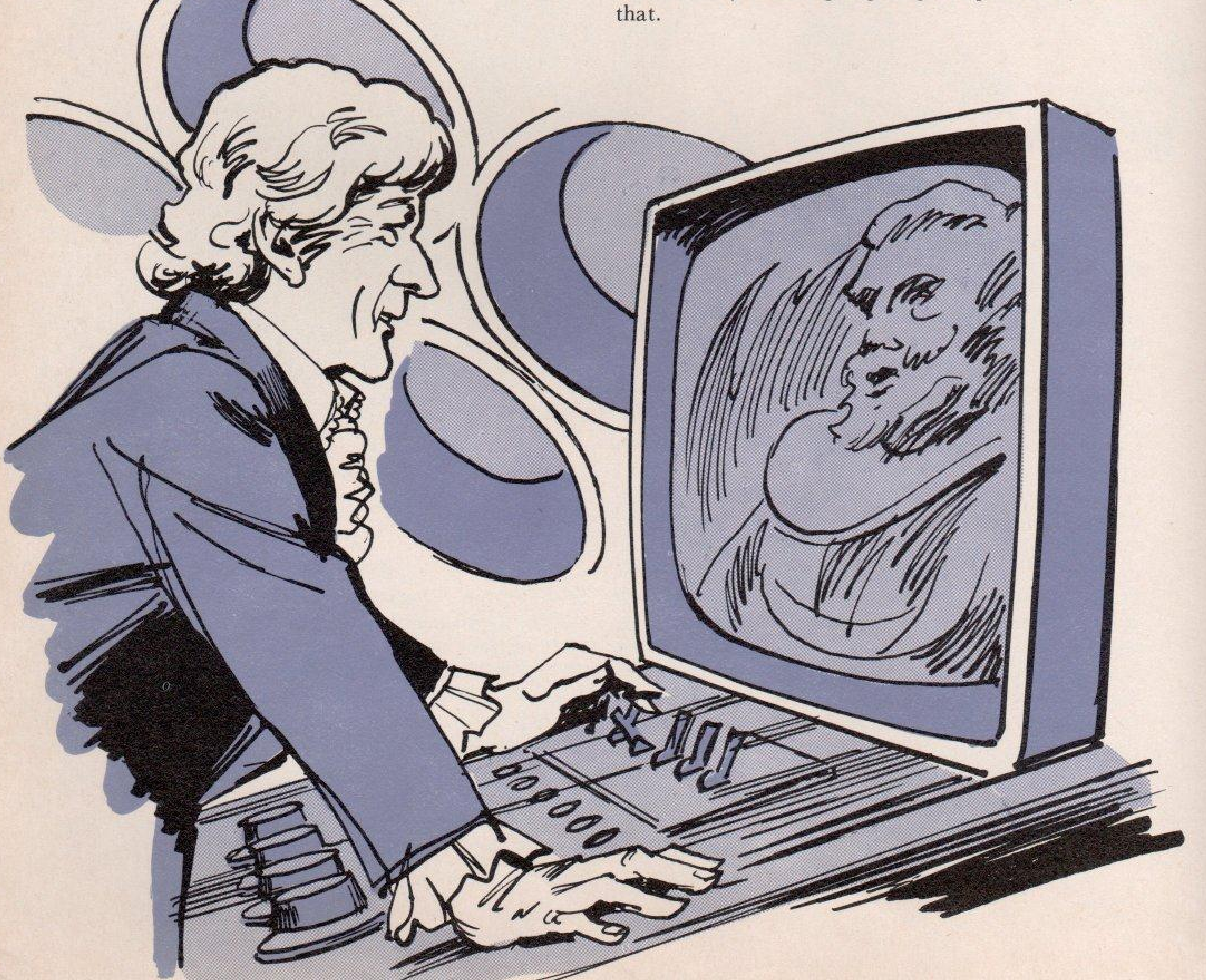
"Madrigor was brilliant, young and brilliant, in fact the youngest on Gallifrey ever to be appointed a Time Lord. There was only one problem, he was greedy, ruthlessly greedy, he used his powers for his own ends and not for the good of the galaxy and eventually Karr and the other Time Lords found out. He'd been using his ability to travel through time and space to steal from other planets; he was tried . . . but never punished. Somehow, he managed to escape into the infinitesimal realms of the universe, with the whole of time and space at his fingertips. Well, almost, anyway; apart from the odd reports of his pilfering, no one from Gallifrey has ever seen or heard of him again, until now. . . ."

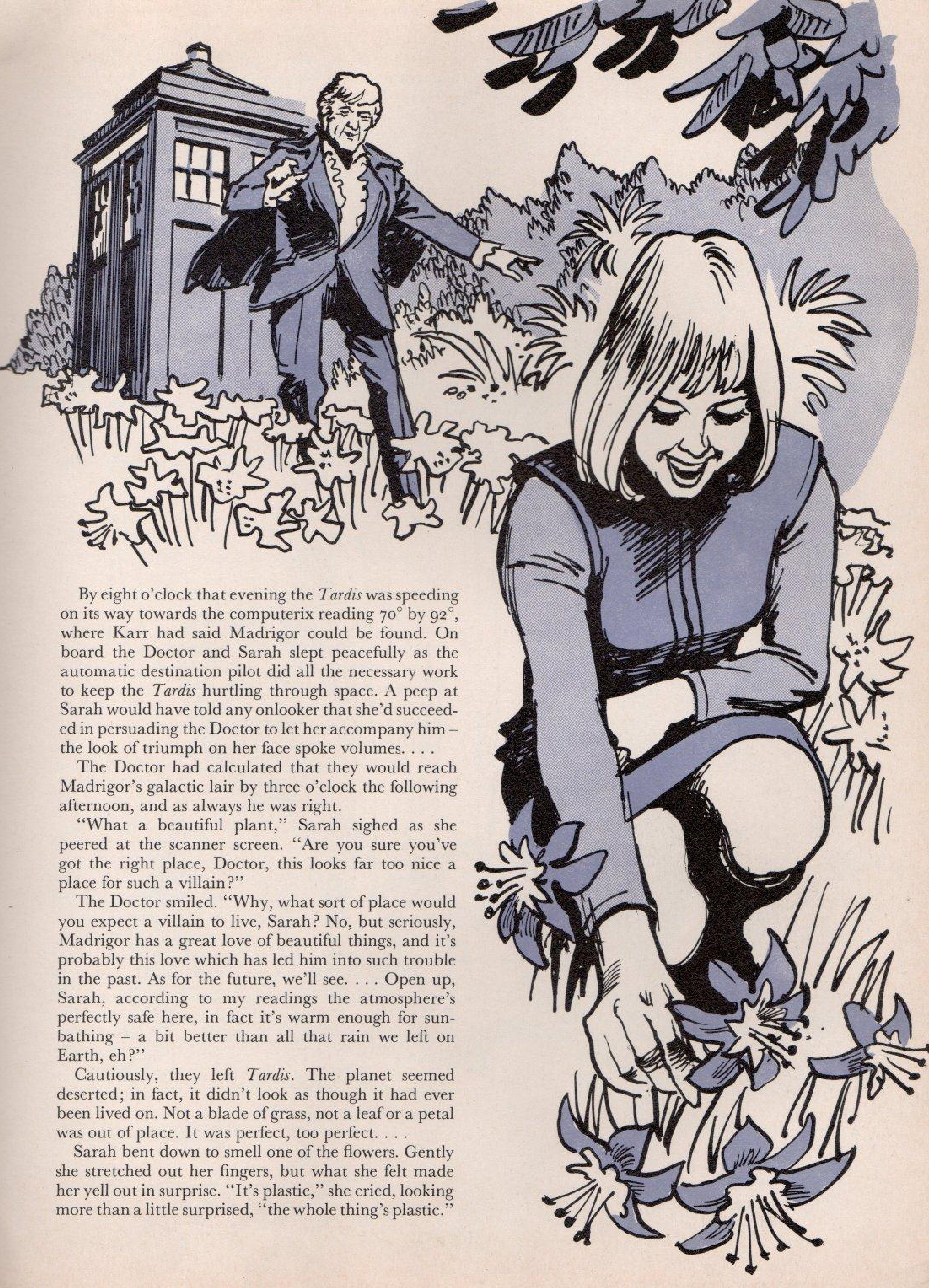
"That's fascinating, Doctor, but what has it got to do with you . . . us?" Sarah asked, hoping that the Doctor would include her in his plans, whatever they were.

"It is *my* job to find out exactly what Madrigor is up to, and I'll start on it just as soon as we've finished tea. Now then, where were we, ah yes, scone?"

Sarah sighed. She knew it wouldn't be easy to persuade the Doctor to let her come along on the trip, but she hadn't given up . . . .

"Yes, please, and pass the blackberry jam, would you." She leaned back in her chair and smiled; no, she certainly wasn't going to give up as easily as all that.





By eight o'clock that evening the *Tardis* was speeding on its way towards the computerix reading 70° by 92°, where Karr had said Madrigor could be found. On board the Doctor and Sarah slept peacefully as the automatic destination pilot did all the necessary work to keep the *Tardis* hurtling through space. A peep at Sarah would have told any onlooker that she'd succeeded in persuading the Doctor to let her accompany him – the look of triumph on her face spoke volumes. . . .

The Doctor had calculated that they would reach Madrigor's galactic lair by three o'clock the following afternoon, and as always he was right.

"What a beautiful plant," Sarah sighed as she peered at the scanner screen. "Are you sure you've got the right place, Doctor, this looks far too nice a place for such a villain?"

The Doctor smiled. "Why, what sort of place would you expect a villain to live, Sarah? No, but seriously, Madrigor has a great love of beautiful things, and it's probably this love which has led him into such trouble in the past. As for the future, we'll see. . . . Open up, Sarah, according to my readings the atmosphere's perfectly safe here, in fact it's warm enough for sunbathing – a bit better than all that rain we left on Earth, eh?"

Cautiously, they left *Tardis*. The planet seemed deserted; in fact, it didn't look as though it had ever been lived on. Not a blade of grass, not a leaf or a petal was out of place. It was perfect, too perfect. . . .

Sarah bent down to smell one of the flowers. Gently she stretched out her fingers, but what she felt made her yell out in surprise. "It's plastic," she cried, looking more than a little surprised, "the whole thing's plastic."

"You're right, well almost," the Doctor agreed examining closely the plants around him. "Not quite as primitive as plastic. I would say Telatron, or something like that, does not crush, fade, lose its shape. . . ."

"You missed out the fact that it's flameproof, Doctor," a mocking voice echoed behind them. "But, please, don't let me stop you, carry on with your examinations."

"Madrigor," the Doctor spoke without bothering to turn round, "I didn't think you'd be too far away."

"No," Madrigor replied with more than a little amusement in his voice, "I thought the same about you. I was quite sure that once Karr and the other Time Lords had been notified of my arrival they'd send someone to find out what I was up to. Had I been in their place I should have chosen you too."

The Doctor nodded his head in acknowledgement, smiling slightly, as Sarah looked on in amazement. She hadn't expected such an amicable first meeting.

Then Madrigor turned his attention to the Doctor's assistant. "I don't think we've ever met before Miss . . .?"

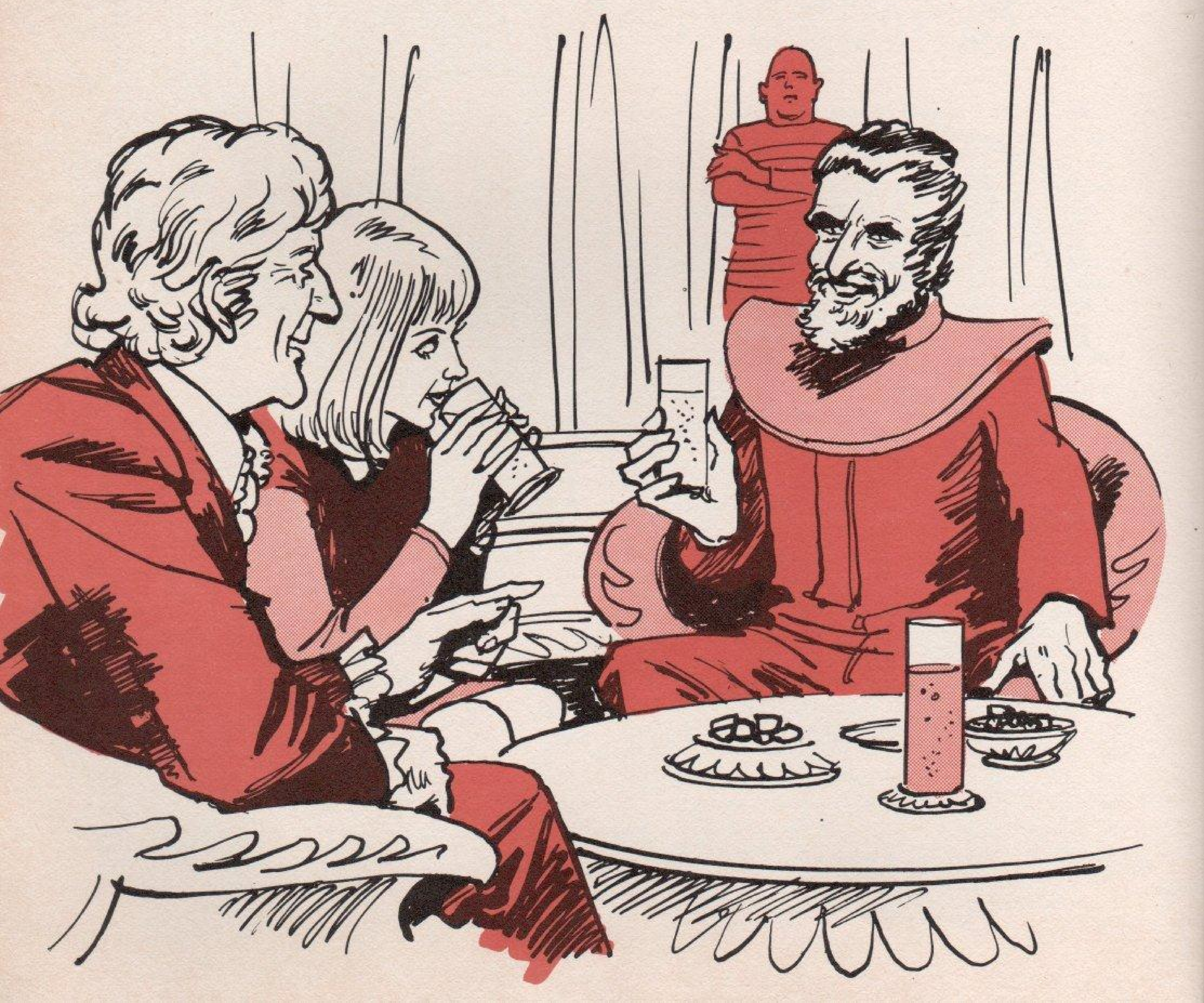
"Smith." Sarah smiled politely, unable to believe that this was the villain of the piece.

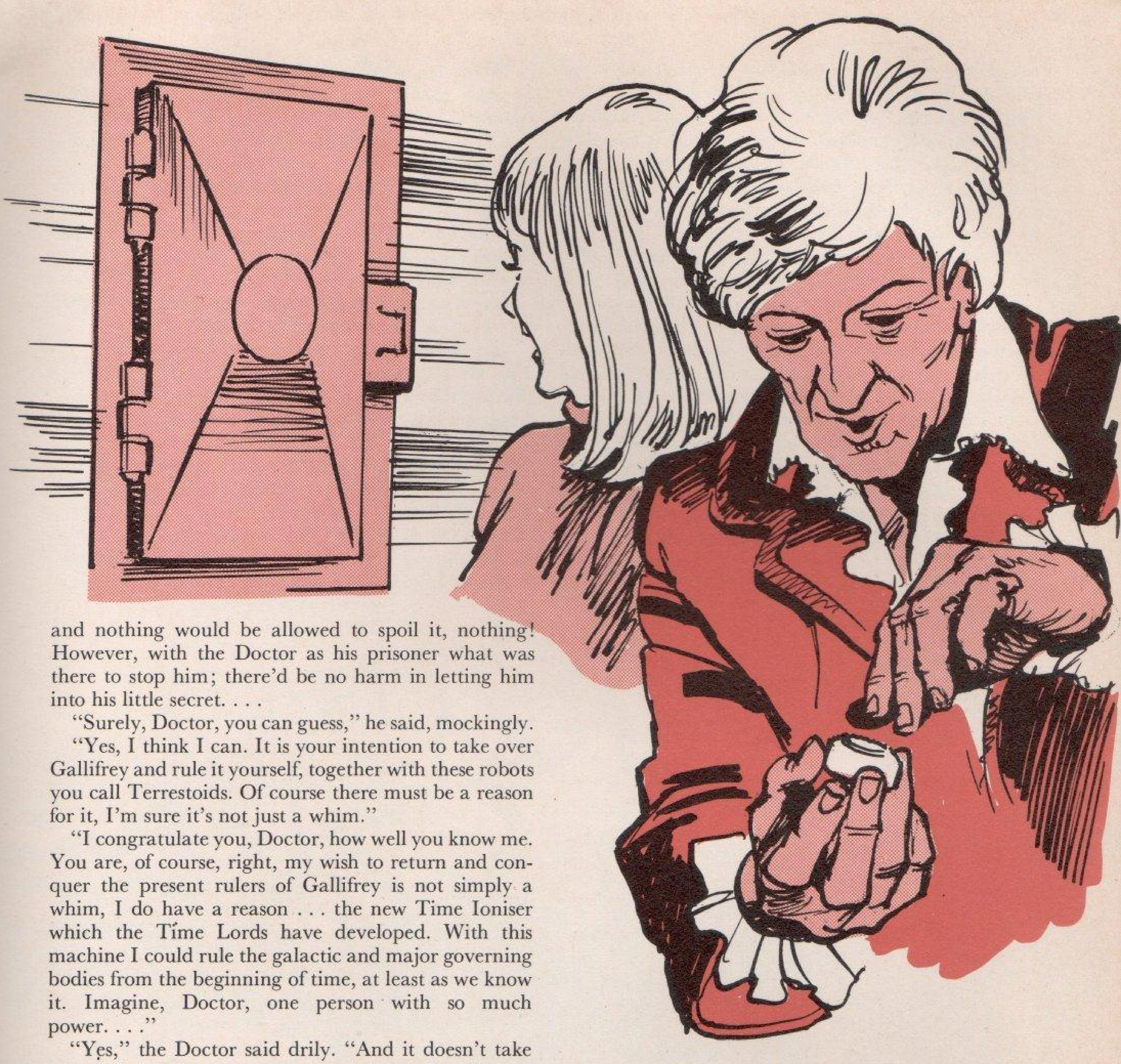
"Well, Miss Smith, welcome to Lunargov III, my humble travelling home. I'm sorry you were disappointed that my flowers weren't real, but, you see, with the nomadic existence that I lead, hopping from one atmosphere to another, 'real' flowers, as you call them, wouldn't be a practicable proposition." Madrigor smiled dazzlingly. "Refreshments?" he asked, pointing along the winding path which stretched in front of them.

Madrigor's home was as impressive if not more so than the rest of his planet, and even before the nomadic Time Lord broached the subject the Doctor knew that this was to be their home too, for the time being. At least until Madrigor had carried out his plans. . . .

The Doctor sipped his drink thoughtfully. Finally he spoke: "Perhaps you'd tell us what your plans are, Madrigor, as we're to be accessories to it, though not willing ones."

The Time Lord smiled slowly, savouring the moment. He'd waited a long time for this opportunity





and nothing would be allowed to spoil it, nothing! However, with the Doctor as his prisoner what was there to stop him; there'd be no harm in letting him into his little secret. . . .

"Surely, Doctor, you can guess," he said, mockingly.

"Yes, I think I can. It is your intention to take over Gallifrey and rule it yourself, together with these robots you call Terrestoids. Of course there must be a reason for it, I'm sure it's not just a whim."

"I congratulate you, Doctor, how well you know me. You are, of course, right, my wish to return and conquer the present rulers of Gallifrey is not simply a whim, I do have a reason . . . the new Time Ioniser which the Time Lords have developed. With this machine I could rule the galactic and major governing bodies from the beginning of time, at least as we know it. Imagine, Doctor, one person with so much power. . . ."

"Yes," the Doctor said drily. "And it doesn't take too much imagination, as a man with your intelligence should realise. You can't possibly succeed Madrigor, you must know that."

"We'll see, Doctor, we'll see. And now I must ask you to follow the robot over there. He'll show you to your quarters, I trust you'll find them comfortable. Although, if my plan goes smoothly, you won't have to spend much time there."

Sarah shuddered as the door closed with an ominous click behind them. "Ugh! Those robots give me the creeps, they look so . . . so *human!*"

"M'mmm," the Doctor prowled around the room, examining the walls very carefully. "Not much hope of getting out through these, if I'm not mistaken they're electrified. It'll have to back the way we came in, that's all there is to it."

"But how, Doctor? Surely if the walls are electrified then the door will be too, and even if it isn't there's bound to be one of those Terrestoid things outside . . . watching." Sarah's eyes darted towards the door as she spoke, as though half expecting one of the robots to appear at the sound of her voice.

"Leave it to me, Sarah, I think I've got just the answer." The Doctor immediately turned out his left-hand pocket and began to search amongst the jumble of bits and pieces. "Got it!" he said triumphantly swooping on a small silver object not much bigger than a coat button.

Sarah looked doubtful, but decided to say nothing; she'd learnt that much in the short time that she'd known the Doctor. His ability to do seemingly impossible things never ceased to amaze her.

"Sarah, I want you to stand by that door and when I shout 'now', open the door and check that the coast is clear." The Doctor's voice broke into her thoughts and, trembling slightly, she obeyed.

"Er, ready when you are, Doctor." Sarah stood ready for action by the door.

*"Now!"* As the Doctor activated the Ion Polarity Retarder, Sarah flung the door open.

"It worked!" she said in an amazed voice.

"You'd have been electrocuted if it hadn't," the Doctor said drily, as he walked towards the door. "Anyway, we won't worry about that now. Come on, this thing is only in its experimental stages, I don't know how long it can withstand the pressures of . . . Duck!"

Sarah and the Doctor ducked behind one of the many screen panels just in time to avoid a confrontation with a furious-looking Madrigor, who flew out of one of the doors in a blind rage making directly for the room that his two prisoners had just vacated.

"H'mmm, looks mad, doesn't he?" Sarah whispered.

"Hopping," the Doctor replied. "Come on, we'll slip through that door. The one that Madrigor came through."

The room was filled with equipment; flashing lights, rows of buttons and levers, computers silently discharging endless streams of tape. Sarah was completely dazzled by it all.

"How convenient," the Doctor mused, "must be my day. Control room first shot. We need look no further, my dear."

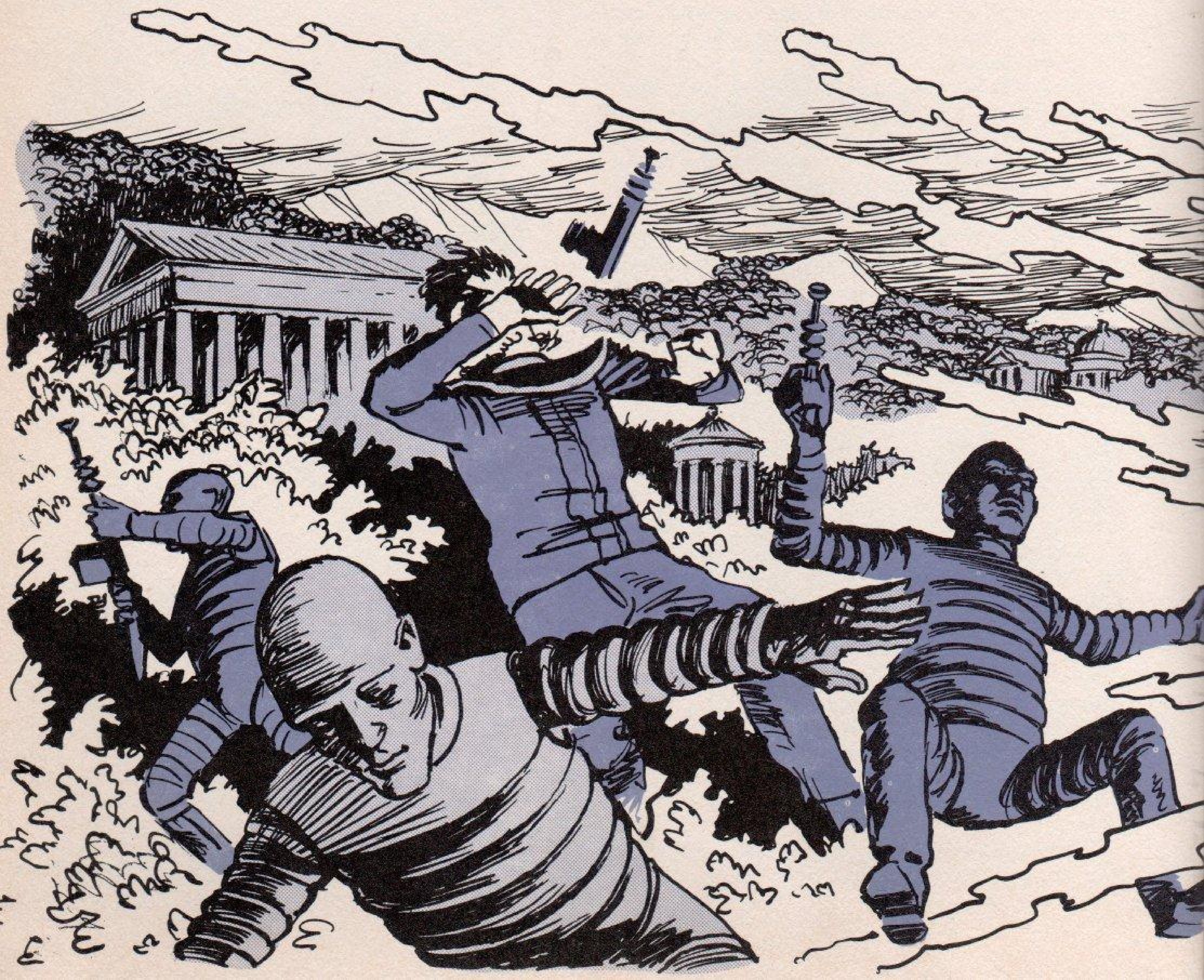
Sarah stared in wonderment as the Doctor began flicking switches and pressing buttons.

"Er, I shouldn't go any further, Doctor. You may have dealt for the moment with my staff, but I don't think you'll be able to deal with me quite so easily." Madrigor's large frame filled the doorway, in his hand he held a laser.

The Doctor shrugged. "I thought it was all going a bit too well. Never mind. Well, Madrigor, what's the next step?"

"First of all, I'd like that little gadget you used to de-activate my Terrestoids, if you don't mind, Doctor."

Slowly the Doctor reached into his pocket once



more, pulling out the small disc-like object. "Catch! Run, Sarah, run! Make for *Tardis!*"

Coolly, Madrigor picked the small instrument up and turned to look at the fleeing figure of the girl. "I'm disappointed in you, Doctor, such an amateurish trick and doomed to failure. My terrestoids will recapture the girl in seconds."

The last word had hardly left Madrigor's lips when the Doctor lunged towards him, his billowing cloak knocking the loosely-held laser from Madrigor's hand. He tried in vain to reach it as it spun across the floor, but the Doctor was too fast for him. In seconds the tables were turned once more.

"Er, I'll have that back now, if you don't mind," the Doctor pointed to the gadget which Madrigor still held tightly in his hand. Reluctantly the Time Lord handed it back, but in doing so he inadvertently activated the mechanism which he'd been feverishly looking for seconds before.

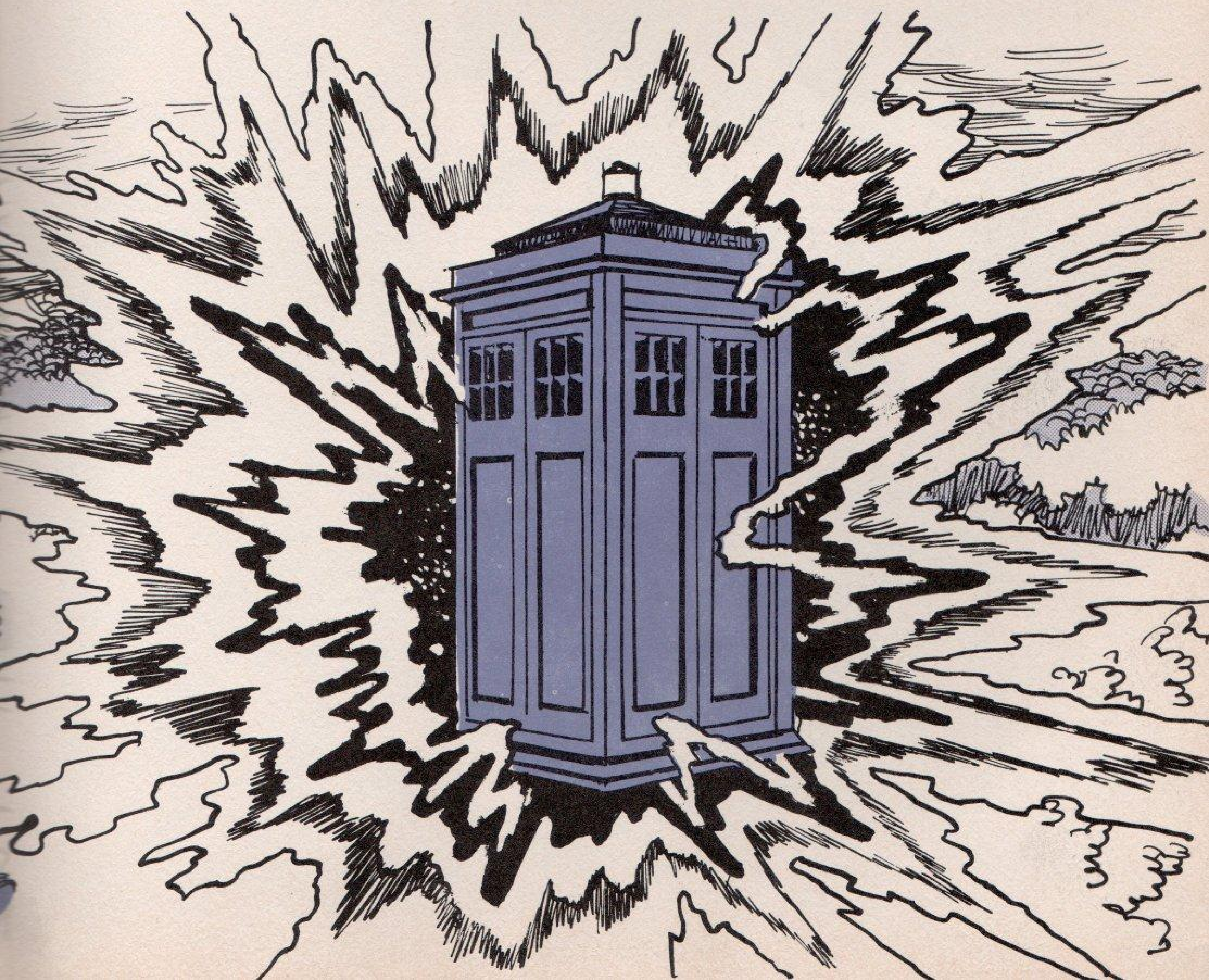
In an instant all the robots on Lunargov III were reactivated. The Doctor was in trouble. There was only one thing for it . . . to run!

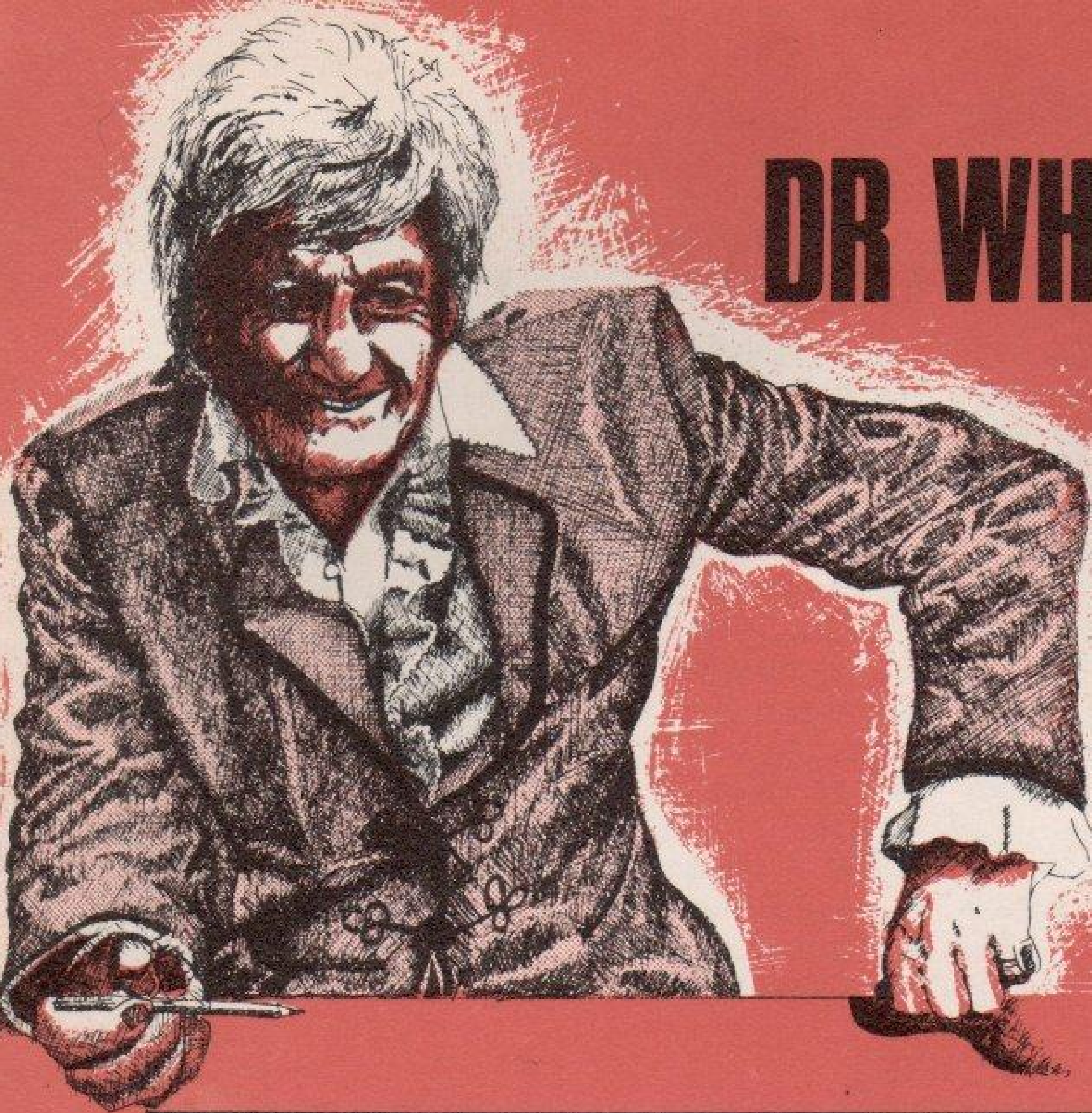
"Hurry, Doctor, hurry! They're catching you up!" Sarah looked worriedly from the entrance of the *Tardis*. "Quick! Inside!"

The Doctor gasped. One of the terrestoids was only a matter of inches away. As Sarah screamed in terror, the Doctor touched the mechanism on the Ion Polarity Retarder once more, and the robot shuddered to a halt. Hurriedly the Doctor pushed the robot away from the *Tardis*, then, having regained some of his calm, he said: "Close the door, will you, Sarah. There's just one little thing I have to do and then we can make our way home again."

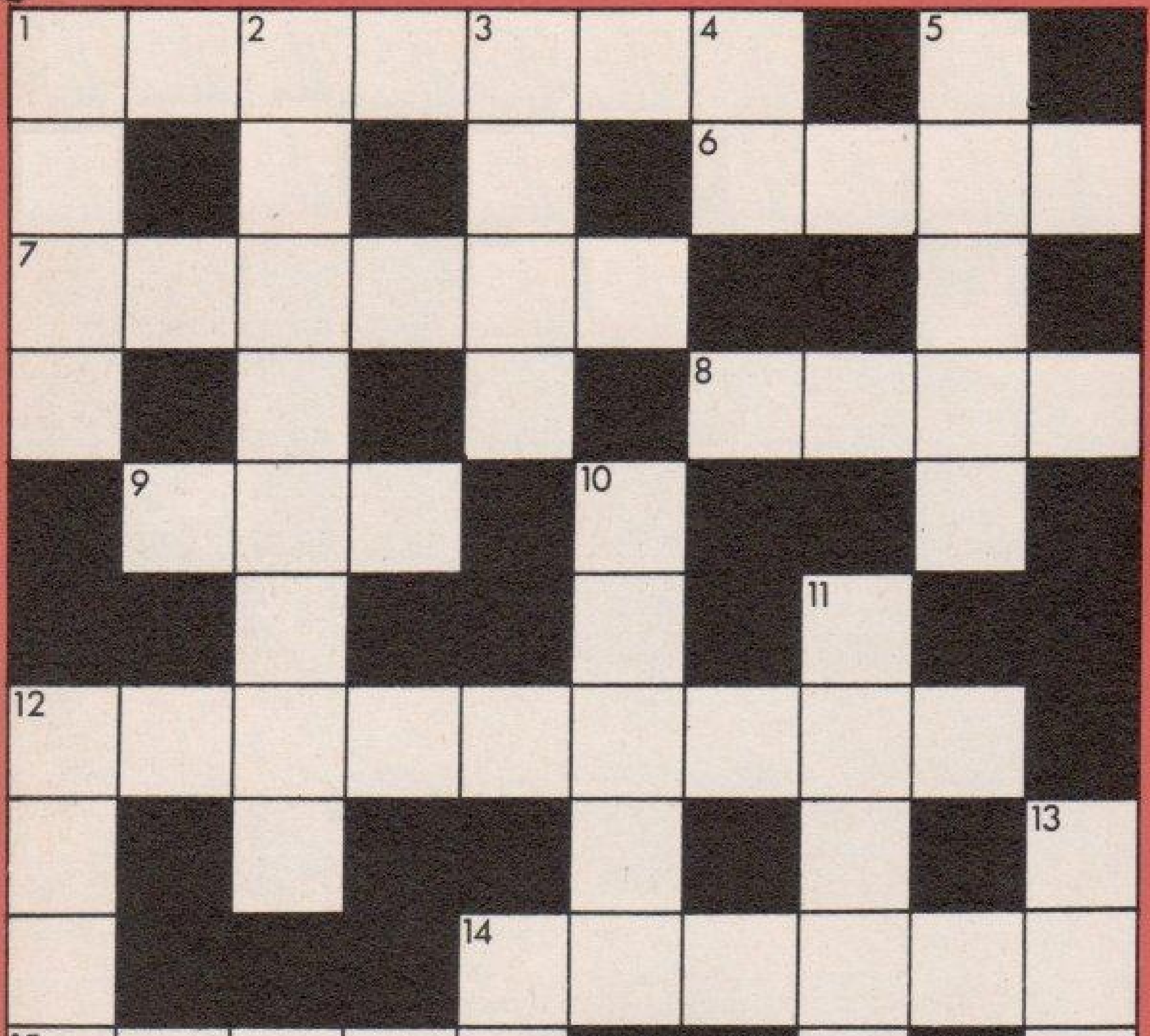
For a moment the Doctor stood quite still and silent, deep in thought. Then he began to flick switches on the large control panel in front of him. "Strap yourself in, Sarah, this could be a bumpy ride. I want to despatch Madrigor off to somewhere where he can't do any harm, but I don't want us to have to go along on the trip too. Hold tight!" The Doctor pressed the final button.

The *Tardis* lurched and bumped and outside everything spun in a myriad of colours, and then Madrigor and Lunargov III were no more and *Tardis* was once more earthbound.





# DR WHO'S SPACEAGE CROSSWORD



**Clues Across:**

1 Alias Dr Who himself (7)
6 A simple form of living organism (4)
7 Measured on wrists, also vegetables (6)
8 Small laboratories? (4)
9 And so on, and so on (3)
12 One who steers a ship, Henry was a famous one (9)
14 Pertaining to the stars (6)
15 The planet on which we live (5)

**Clues Down:**

1 The musical instrument that typified a former Dr Who (4)
2 "The Time and ........ Dimensions in Space" vehicle, otherwise known as the Tardis (8)
3 Who? what? where? how? ....? (4)
4 A small egg, for example? (2)
5 To examine something very thoroughly (5)
10 Celestial bodies (5)
11 Units of time (5)
12 On the 'face' of a spaceship? (4)
13 The whole of (3)
14 The 1st and 8th letters of the alphabet make an exclamation (2)

**ANSWERS:**

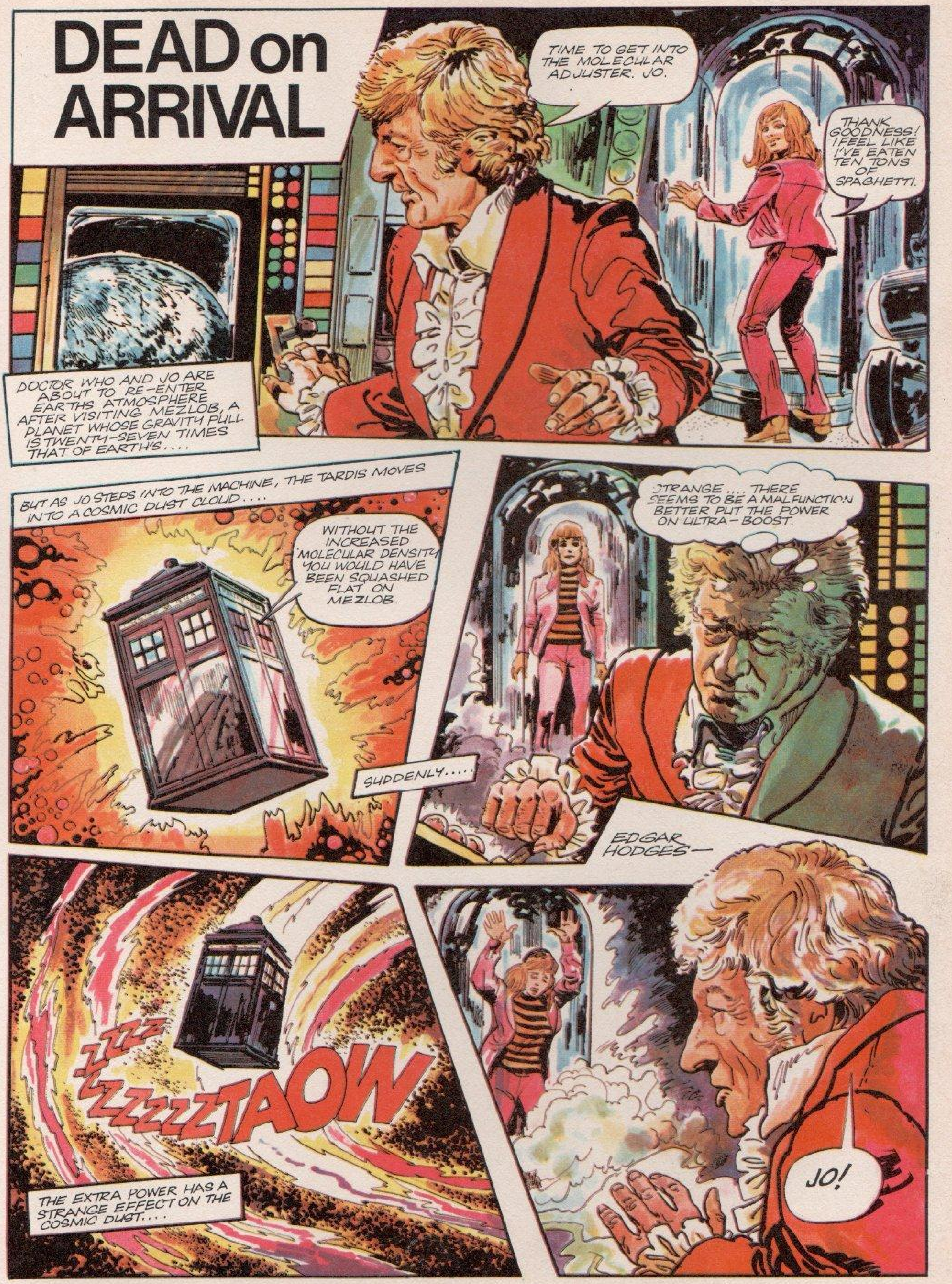
**Across:**

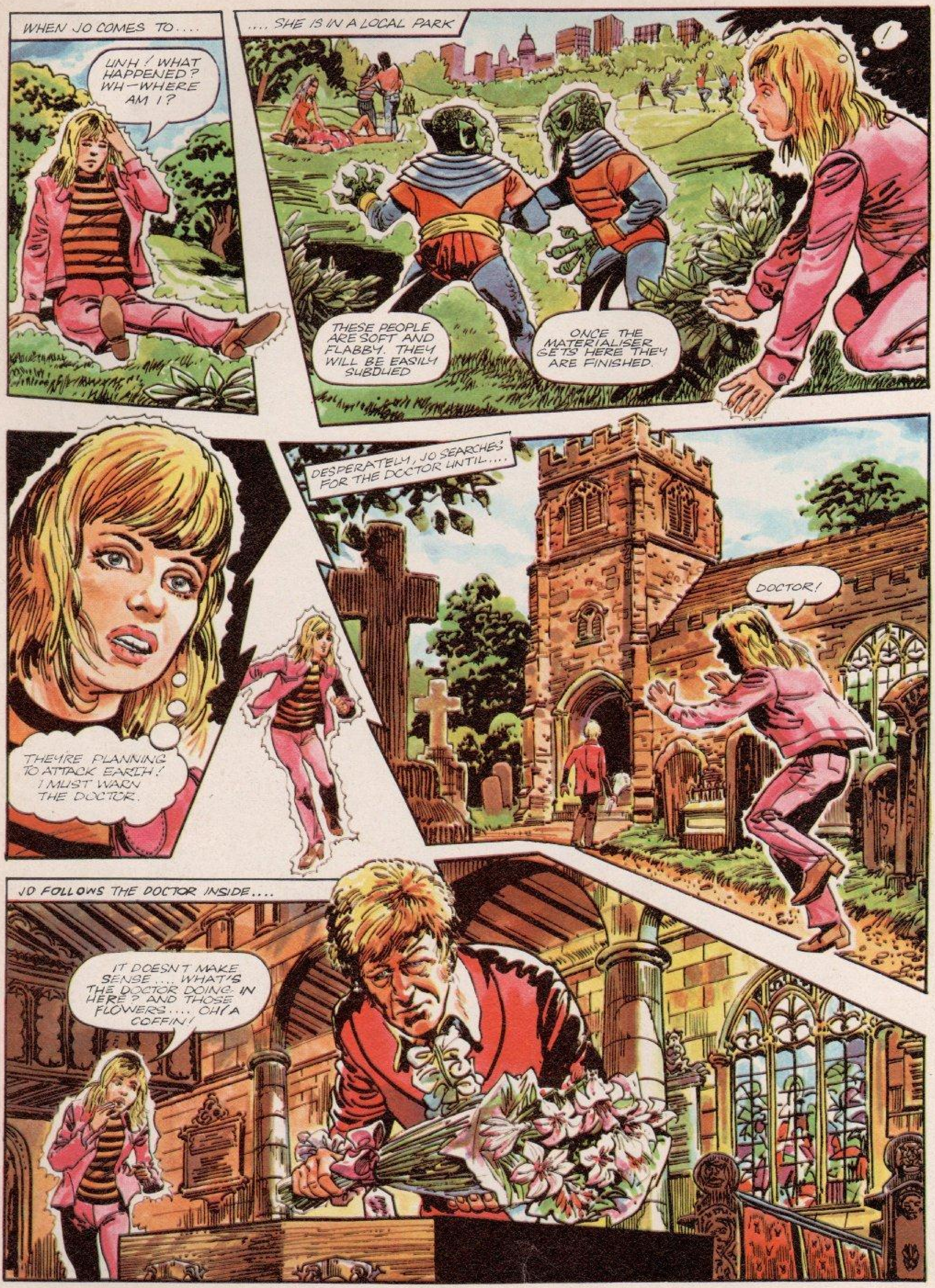
1 Pertwee; 6 Germ; 7 Pulses; 8 Labs; 9 Etc; 12 Navigator; 14 Astral; 15 Earth

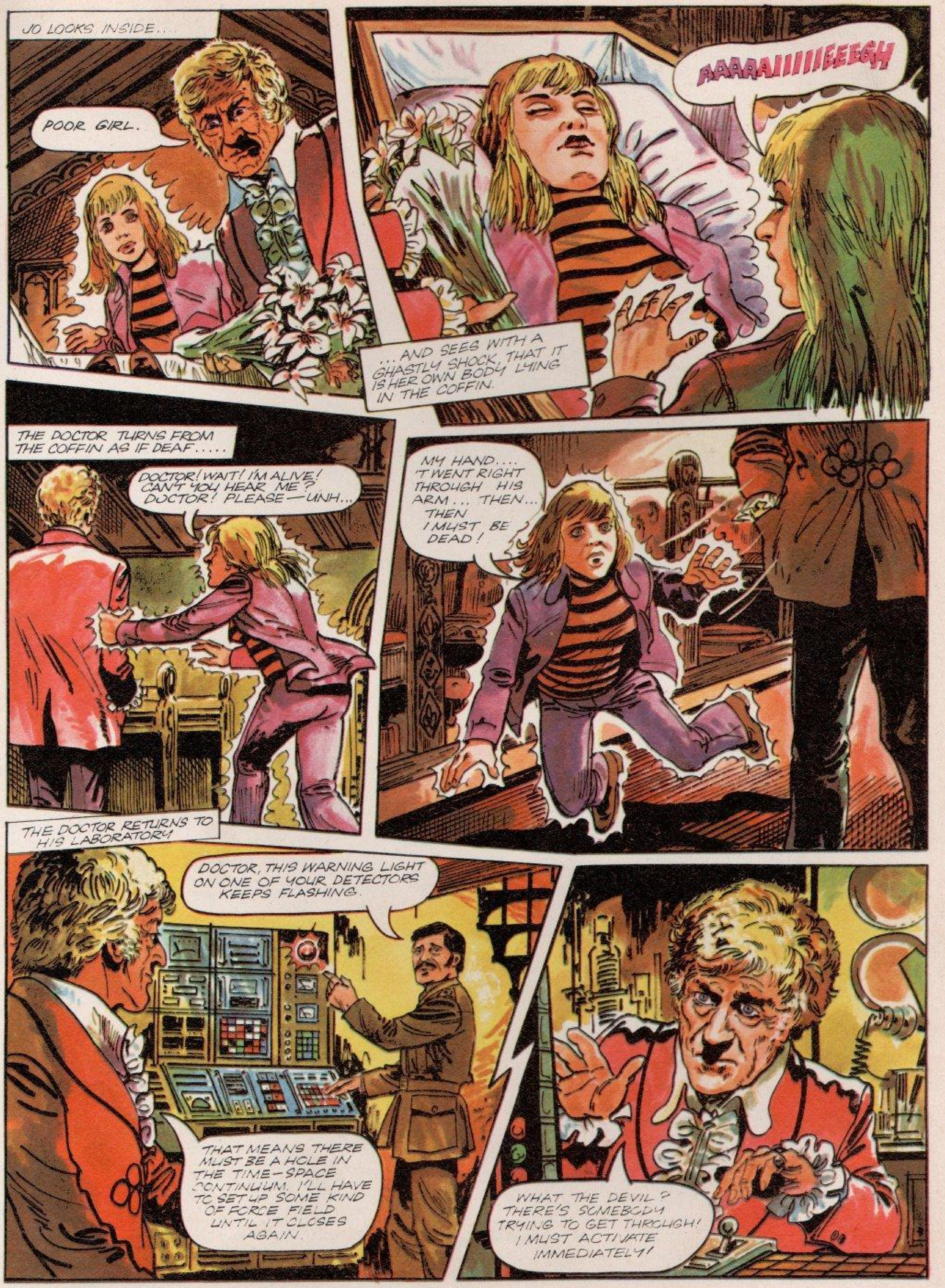
**Down:**

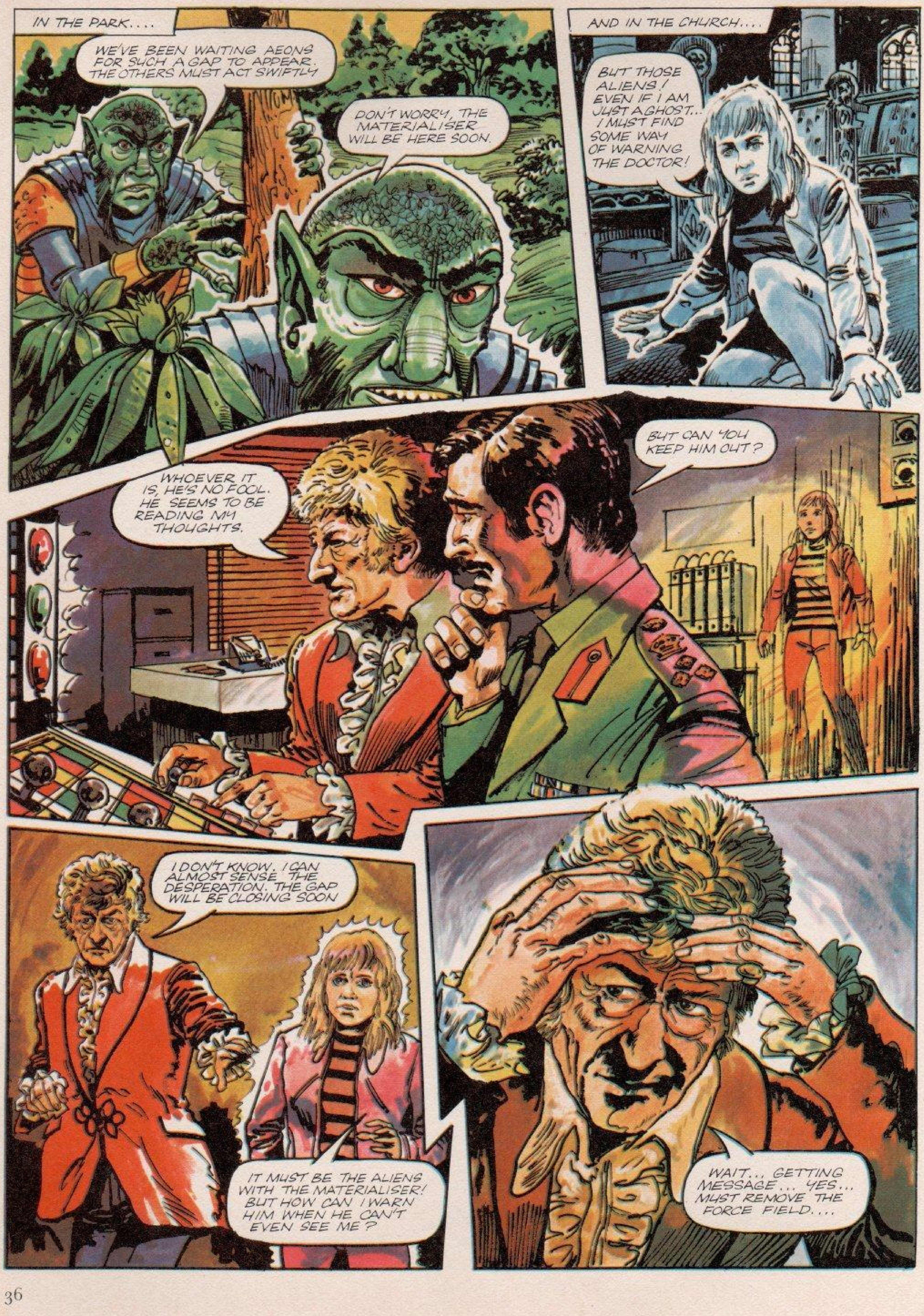
1 Pipe; 2 Relative; 3 When; 4 Eg; 5 Probe; 10 Stars; 11 Hours; 12 Nose; 13 All; 14 Ah

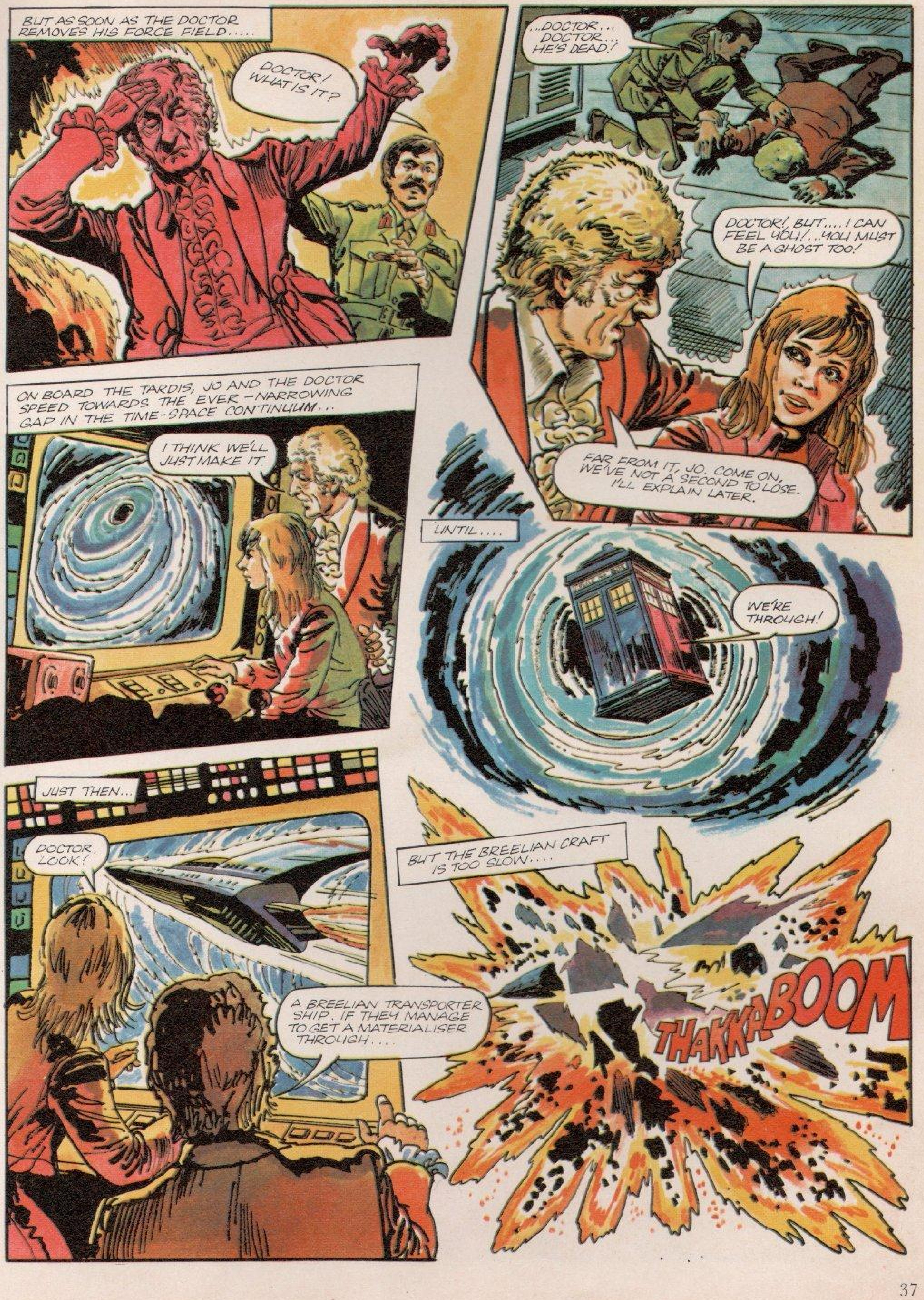
# DEAD on ARRIVAL

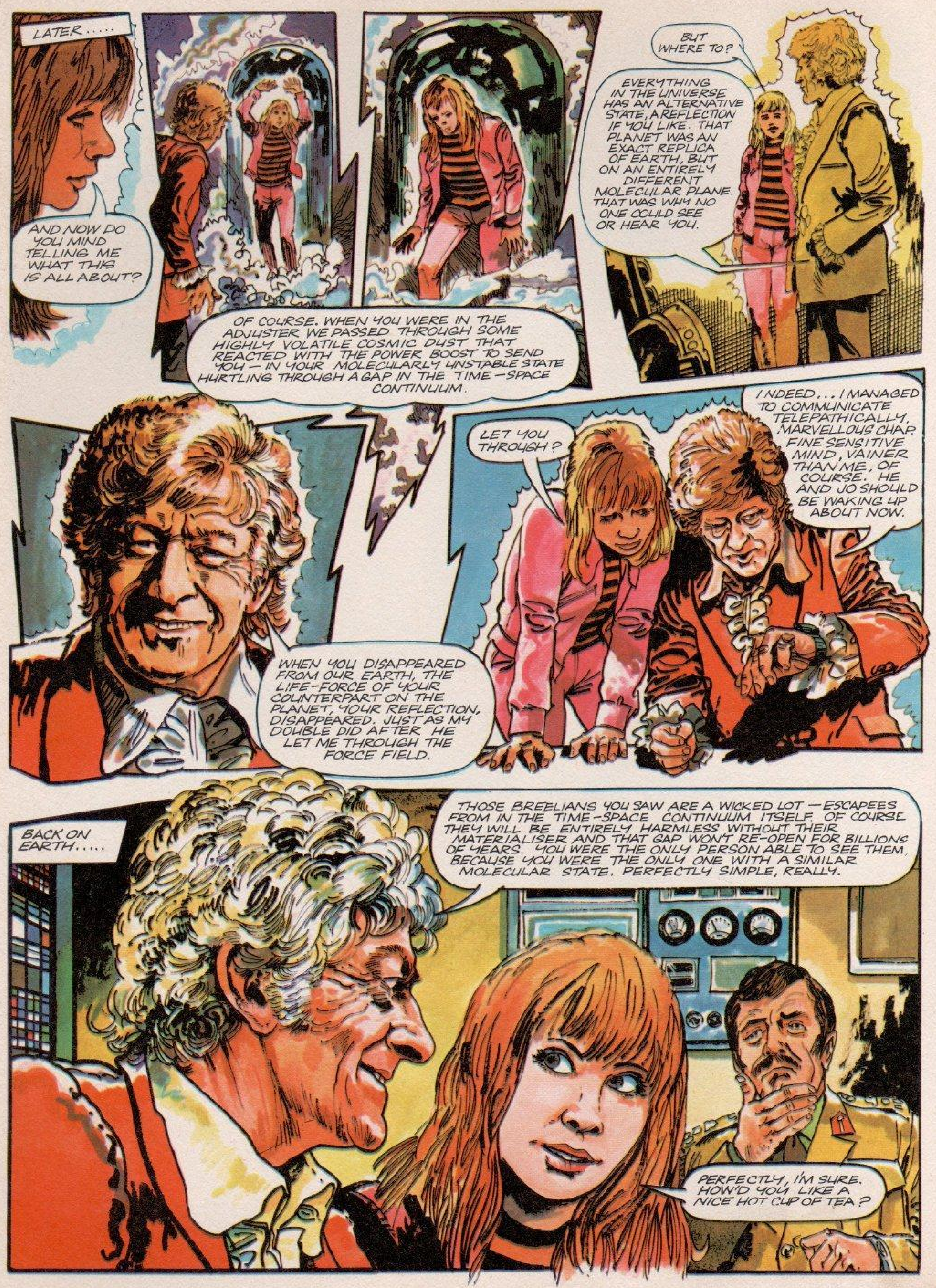

TIME TO GET INTO THE MOLECULAR ADJUSTER, JO.
THANK GOODNESS! I FEEL LIKE I'VE EATEN TEN TONS OF SPAGHETTI.
DOCTOR WHO AND JO ARE ABOUT TO RE-ENTER EARTHS ATMOSPHERE AFTER VISITING MEZLOB, A PLANET WHOSE GRAVITY PULL IS TWENTY-SEVEN TIMES THAT OF EARTH'S....
BUT AS JO STEPS INTO THE MACHINE, THE TARDIS MOVES INTO A COSMIC DUST CLOUD....
WITHOUT THE INCREASED MOLECULAR DENSITY YOU WOULD HAVE BEEN SQUASHED FLAT ON MEZLOB.
SUDDENLY.....
STRANGE .... THERE SEEMS TO BE A MALFUNCTION BETTER PUT THE POWER ON ULTRA-BOOST.
EDGAR HODGES—
ZZZZZZZZZZTAOW
THE EXTRA POWER HAS A STRANGE EFFECT ON THE COSMIC DUST....
JO!


WHEN JO COMES TO....
UNH! WHAT HAPPENED? WH—WHERE AM I?
.... SHE IS IN A LOCAL PARK
!
THESE PEOPLE ARE SOFT AND FLABBY. THEY WILL BE EASILY SUBDUED
ONCE THE MATERIALISER GETS HERE THEY ARE FINISHED.
THEY'RE PLANNING TO ATTACK EARTH! I MUST WARN THE DOCTOR.
DESPERATELY, JO SEARCHES FOR THE DOCTOR UNTIL....
DOCTOR!
JO FOLLOWS THE DOCTOR INSIDE....
IT DOESN'T MAKE SENSE .... WHAT'S THE DOCTOR DOING IN HERE? AND THOSE FLOWERS.... OH! A COFFIN!

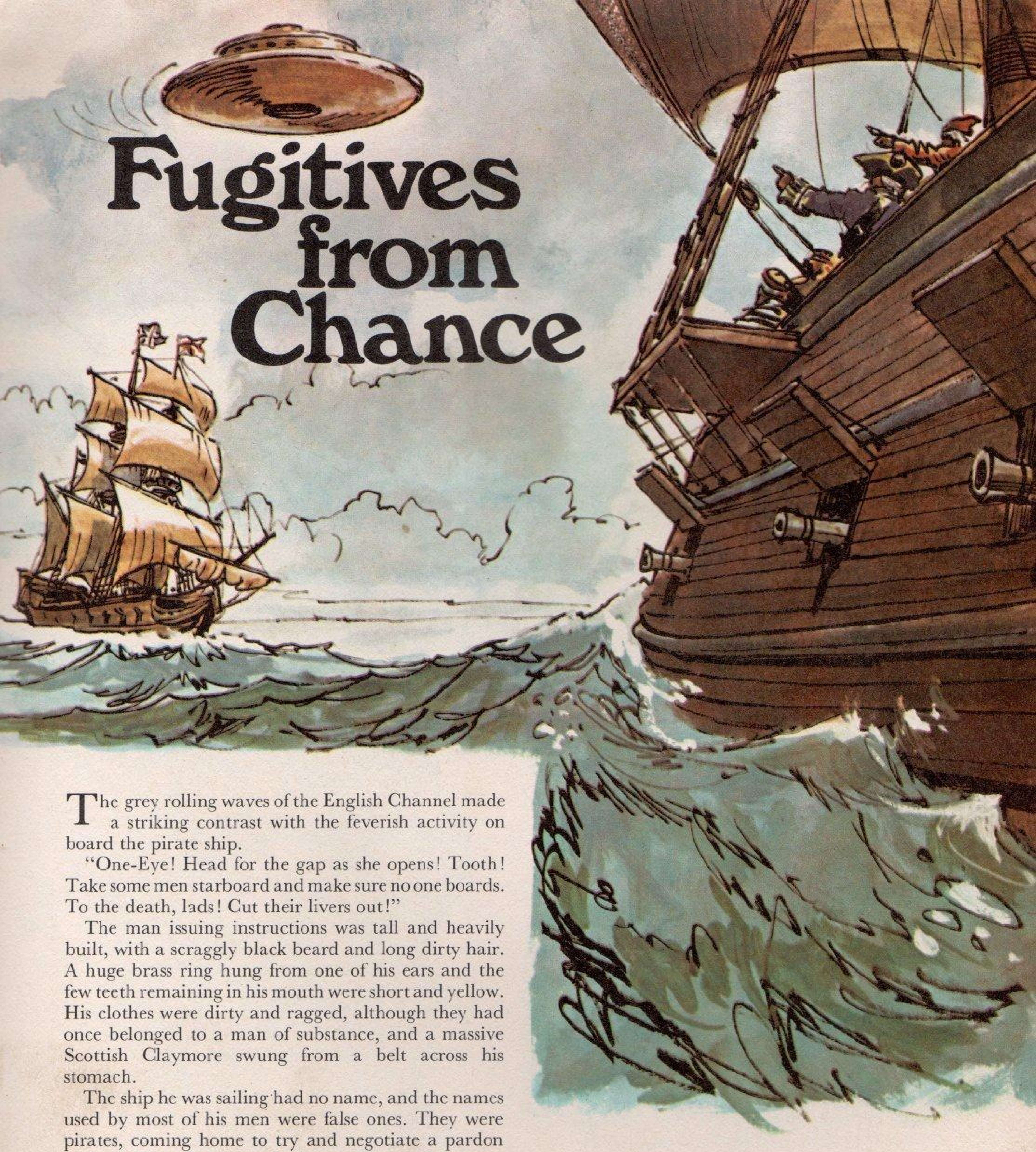

JO LOOKS INSIDE....
POOR GIRL.
AAAAAIIIIIEEEGH
...AND SEES WITH A GHASTLY SHOCK, THAT IT IS HER OWN BODY LYING IN THE COFFIN.
THE DOCTOR TURNS FROM THE COFFIN AS IF DEAF.....
DOCTOR! WAIT! I'M ALIVE! CAN'T YOU HEAR ME? DOCTOR! PLEASE—UNH...
MY HAND.... 'T WENT RIGHT THROUGH HIS ARM... THEN... THEN I MUST BE DEAD!
THE DOCTOR RETURNS TO HIS LABORATORY
DOCTOR, THIS WARNING LIGHT ON ONE OF YOUR DETECTORS KEEPS FLASHING.
THAT MEANS THERE MUST BE A HOLE IN THE TIME-SPACE CONTINUUM. I'LL HAVE TO SET UP SOME KIND OF FORCE FIELD UNTIL IT CLOSES AGAIN.
WHAT THE DEVIL? THERE'S SOMEBODY TRYING TO GET THROUGH! I MUST ACTIVATE IMMEDIATELY!


IN THE PARK....
WE'VE BEEN WAITING AEONS FOR SUCH A GAP TO APPEAR. THE OTHERS MUST ACT SWIFTLY
DON'T WORRY, THE MATERIALISER WILL BE HERE SOON.
AND IN THE CHURCH....
BUT THOSE ALIENS! EVEN IF I AM JUST A GHOST... I MUST FIND SOME WAY OF WARNING THE DOCTOR!
WHOEVER IT IS, HE'S NO FOOL. HE SEEMS TO BE READING MY THOUGHTS.
BUT CAN YOU KEEP HIM OUT?
I DON'T KNOW. I CAN ALMOST SENSE THE DESPERATION. THE GAP WILL BE CLOSING SOON
IT MUST BE THE ALIENS WITH THE MATERIALISER! BUT HOW CAN I WARN HIM WHEN HE CAN'T EVEN SEE ME?
WAIT... GETTING MESSAGE... YES... MUST REMOVE THE FORCE FIELD....


BUT AS SOON AS THE DOCTOR REMOVES HIS FORCE FIELD.....
DOCTOR! WHAT IS IT?
...DOCTOR... DOCTOR... HE'S DEAD!
DOCTOR!, BUT.... I CAN FEEL YOU!...YOU MUST BE A GHOST TOO!
FAR FROM IT, JO. COME ON, WE'VE NOT A SECOND TO LOSE. I'LL EXPLAIN LATER.
ON BOARD THE TARDIS, JO AND THE DOCTOR SPEED TOWARDS THE EVER-NARROWING GAP IN THE TIME-SPACE CONTINUUM...
I THINK WE'LL JUST MAKE IT.
UNTIL....
WE'RE THROUGH!
JUST THEN...
DOCTOR, LOOK!
A BREELIAN TRANSPORTER SHIP. IF THEY MANAGE TO GET A MATERIALISER THROUGH....
BUT THE BREELIAN CRAFT IS TOO SLOW....
THAKKABOOM


LATER.....
AND NOW DO YOU MIND TELLING ME WHAT THIS IS ALL ABOUT?
OF COURSE. WHEN YOU WERE IN THE ADJUSTER WE PASSED THROUGH SOME HIGHLY VOLATILE COSMIC DUST THAT REACTED WITH THE POWER BOOST TO SEND YOU — IN YOUR MOLECULARLY UNSTABLE STATE HURTLING THROUGH A GAP IN THE TIME-SPACE CONTINUUM.
BUT WHERE TO?
EVERYTHING IN THE UNIVERSE HAS AN ALTERNATIVE STATE, A REFLECTION IF YOU LIKE. THAT PLANET WAS AN EXACT REPLICA OF EARTH, BUT ON AN ENTIRELY DIFFERENT MOLECULAR PLANE. THAT WAS WHY NO ONE COULD SEE OR HEAR YOU.
WHEN YOU DISAPPEARED FROM OUR EARTH, THE LIFE-FORCE OF YOUR COUNTERPART ON THE PLANET, YOUR REFLECTION, DISAPPEARED. JUST AS MY DOUBLE DID AFTER HE LET ME THROUGH THE FORCE FIELD.
LET YOU THROUGH?
INDEED... I MANAGED TO COMMUNICATE TELEPATHICALLY. MARVELLOUS CHAP. FINE SENSITIVE MIND, VAINER THAN ME, OF COURSE. HE AND JO SHOULD BE WAKING UP ABOUT NOW.
BACK ON EARTH.....
THOSE BREELIANS YOU SAW ARE A WICKED LOT — ESCAPEES FROM IN THE TIME-SPACE CONTINUUM ITSELF. OF COURSE THEY WILL BE ENTIRELY HARMLESS WITHOUT THEIR MATERIALISER AND THAT GAP WON'T RE-OPEN FOR BILLIONS OF YEARS. YOU WERE THE ONLY PERSON ABLE TO SEE THEM, BECAUSE YOU WERE THE ONLY ONE WITH A SIMILAR MOLECULAR STATE. PERFECTLY SIMPLE, REALLY.
PERFECTLY, I'M SURE. HOW'D YOU LIKE A NICE HOT CUP OF TEA?

# Fugitives from Chance



The grey rolling waves of the English Channel made a striking contrast with the feverish activity on board the pirate ship.

"One-Eye! Head for the gap as she opens! Tooth! Take some men starboard and make sure no one boards. To the death, lads! Cut their livers out!"

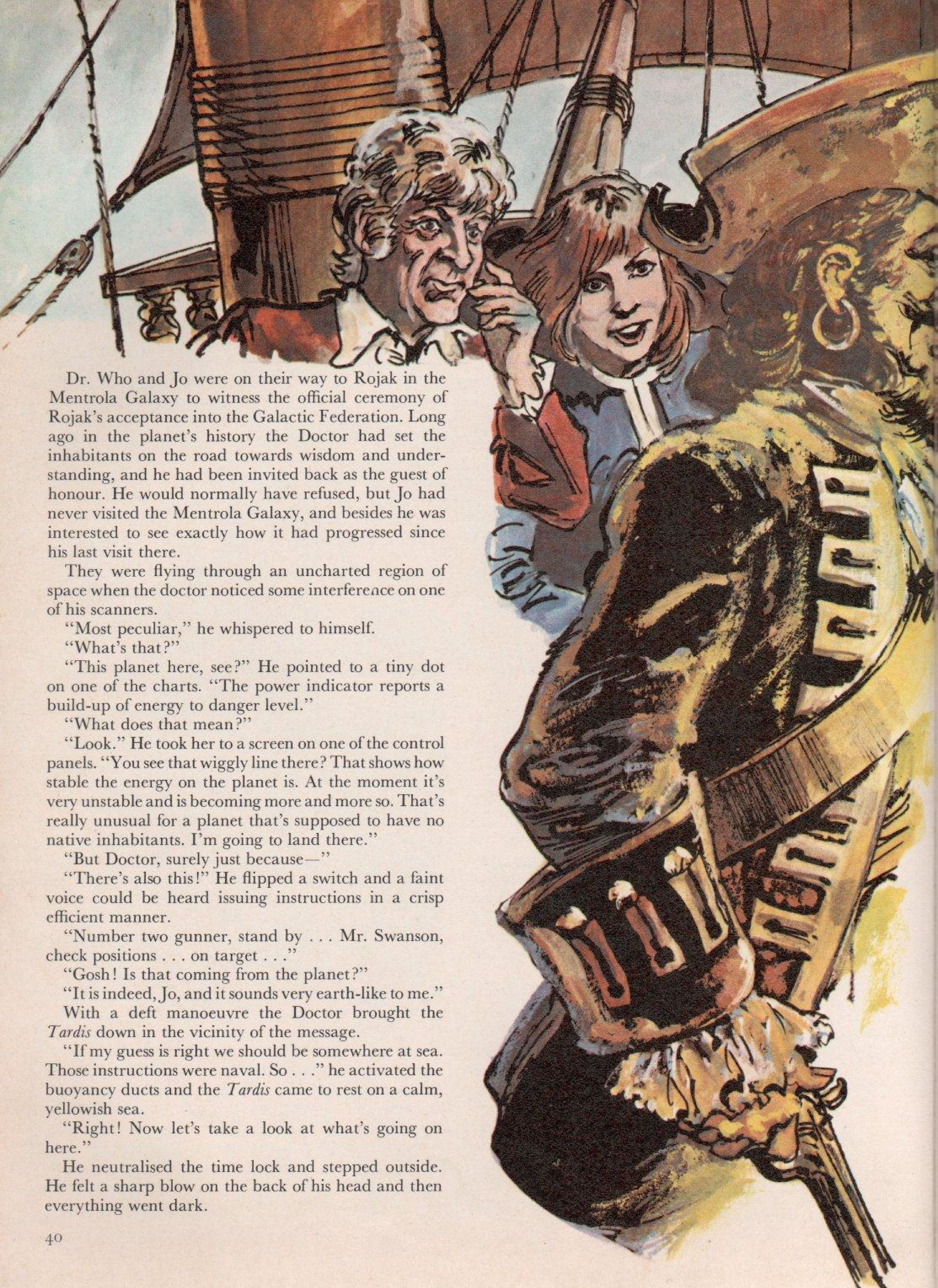
The man issuing instructions was tall and heavily built, with a scraggly black beard and long dirty hair. A huge brass ring hung from one of his ears and the few teeth remaining in his mouth were short and yellow. His clothes were dirty and ragged, although they had once belonged to a man of substance, and a massive Scottish Claymore swung from a belt across his stomach.

The ship he was sailing had no name, and the names used by most of his men were false ones. They were pirates, coming home to try and negotiate a pardon with the King. But things had gone desperately wrong, and after a fierce battle in Dartmouth they had fled. Now they were surrounded by His Majesty's navy, cornered with no hope of escape.

John Mander, ex-captain of H.M.S. *Starlight*, ex-hero of the British Navy, officer turned soldier of fortune and privateer, was facing his death in sight of the country he had served so well, the same country he had betrayed by his murderous exploits in the Caribbean.

As the navy frigates moved closer and closer, and the pirates unsheathed their swords, a sudden hush fell on the scene and the faces of everyone, from captain to cabin boy, turned upwards. There, hovering in the sky, making no noise whatsoever was a huge circular spacecraft.

As the men watched in awe a beam shot downwards from it onto the pirate ship, which disappeared.



Dr. Who and Jo were on their way to Rojak in the Mentrola Galaxy to witness the official ceremony of Rojak's acceptance into the Galactic Federation. Long ago in the planet's history the Doctor had set the inhabitants on the road towards wisdom and understanding, and he had been invited back as the guest of honour. He would normally have refused, but Jo had never visited the Mentrola Galaxy, and besides he was interested to see exactly how it had progressed since his last visit there.

They were flying through an uncharted region of space when the doctor noticed some interference on one of his scanners.

"Most peculiar," he whispered to himself.

"What's that?"

"This planet here, see?" He pointed to a tiny dot on one of the charts. "The power indicator reports a build-up of energy to danger level."

"What does that mean?"

"Look." He took her to a screen on one of the control panels. "You see that wiggly line there? That shows how stable the energy on the planet is. At the moment it's very unstable and is becoming more and more so. That's really unusual for a planet that's supposed to have no native inhabitants. I'm going to land there."

"But Doctor, surely just because—"

"There's also this!" He flipped a switch and a faint voice could be heard issuing instructions in a crisp efficient manner.

"Number two gunner, stand by . . . Mr. Swanson, check positions . . . on target . . ."

"Gosh! Is that coming from the planet?"

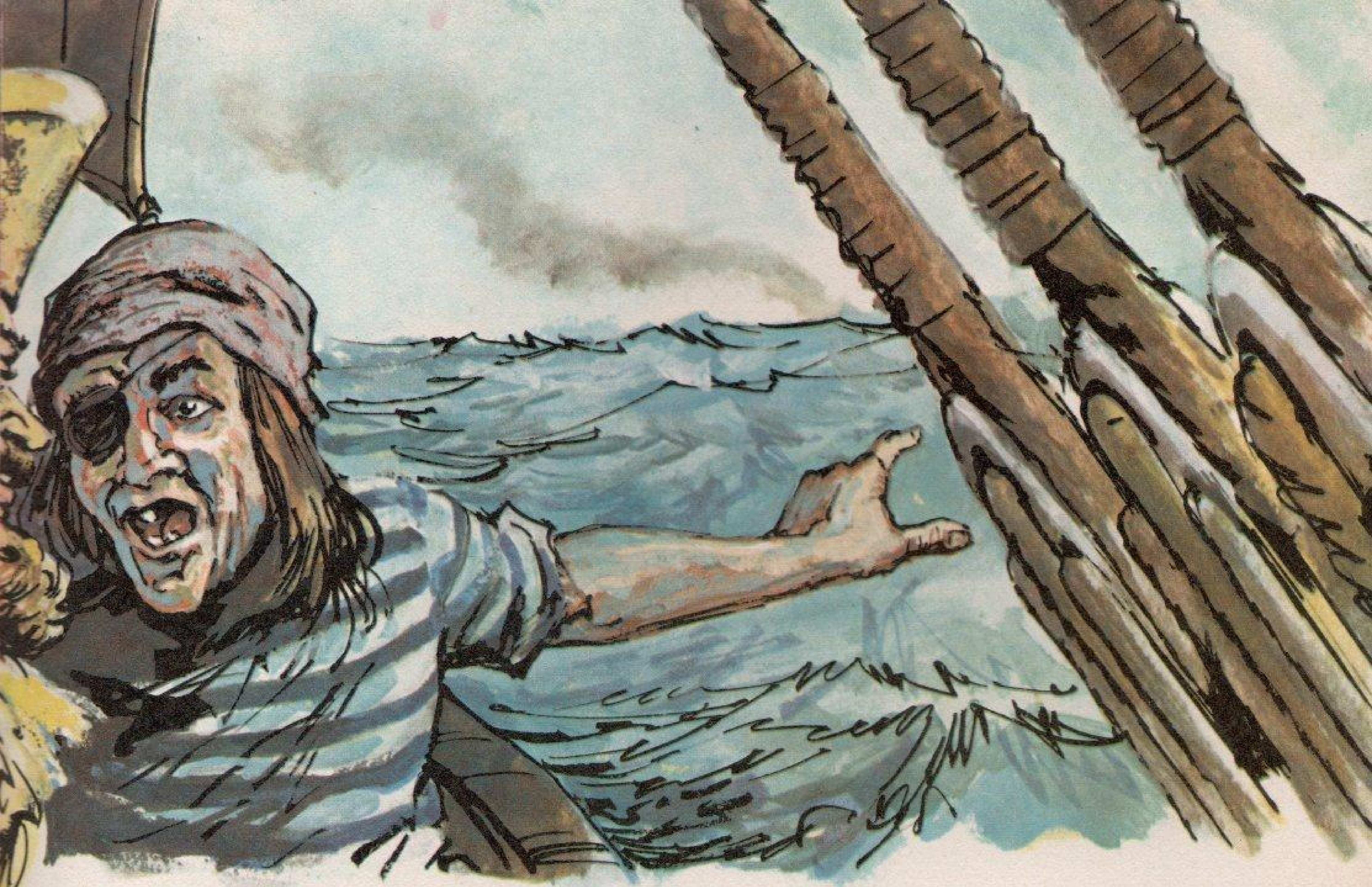
"It is indeed, Jo, and it sounds very earth-like to me."

With a deft manoeuvre the Doctor brought the *Tardis* down in the vicinity of the message.

"If my guess is right we should be somewhere at sea. Those instructions were naval. So . . ." he activated the buoyancy ducts and the *Tardis* came to rest on a calm, yellowish sea.

"Right! Now let's take a look at what's going on here."

He neutralised the time lock and stepped outside. He felt a sharp blow on the back of his head and then everything went dark.



When the Doctor recovered he was lying on the deck of what seemed to be an old galleon. Jo was bending over him.

The Doctor looked around and his jaw dropped in amazement. The whole ship, the deck, the ropes, even the sails were all made of metal! But what amazed him even more was the figure he saw rising from a hatch nearby. The huge figure, the rough, violent face, the long hair and unkempt beard, it was John Mander—made entirely from gleaming, polished gold!

"So you'm be woken, eh dandy? What new weapons have you brought?"

The Doctor started.

"My ship! The *Tardis!* What have you done with my ship?"

"Don't fret none, Long Nose. She ain't been scuttled. She's too valuable for that. Queer little thing, ain't she?"

"Do you think you could explain how and why you attacked us. I have some information that might save your lives."

"Our lives? Ha! Do these hands look live to you?" he thrust a gnarled hand in front of the Doctor's face and turned it round and round. The gold seemed both soft and hard at the same time and the Doctor restrained an urge to touch. "Do you call these lips the lips of a live man? This nose, these ears, these eyes!"

The Doctor looked into the solid gold eyes, staring hard at him from beneath golden eyelids and lashes. He was fascinated. It was unlike anything he had ever seen before. As he looked another sailor, this time made of what looked like gun metal and sporting an eye patch, came up and stood beside Mander.

"What weapons 'as 'e brought?"

"'E ain't told as yet."

"Well, we'd best get promptin' him some. There's a trail of smoke on the 'orizon."

The captain searched the horizon. There, far off in the distance, a thin trail of smoke could be seen.

"Botega, and 'e spotted us, damn his hide!"

"If we can't lose 'im we may 'ave to ask for a removal order."

The Captain looked at him, grim and resigned.

"No, One-Eye," he sighed, "no more removal orders. This time we fight him till one of us is dead."

The Doctor followed the exchange carefully, hoping to form in his mind an exact picture of what was going on. Jo looked from the Doctor to Mander and back to the Doctor with growing bewilderment on her face.

"Now, look here," the Doctor began, "I don't know who you are or even what you are, but I do know this. The energy on this planet is building up to such a degree that the planet itself will soon be unable to support it. In less than twenty-four hours this whole planet will explode!"

"You better explain yourself, Silver Locks," said Mander.

The Doctor explained how he had noticed the energy build-up and had heard the radio message. Mander looked at him thoughtfully.

"The message you heard must have come from Botega. His ship is full of things that we don't understand. There's no sails for a start and her guns are real accurate. Last time we fought we 'ad to 'ave a removal order, else 'e would 'ave sent us down to the bottom. This time . . ." he glanced at One-Eye, ". . . this time we don't care. There'll be no removal order."

"What is a removal order?"

Mander brought a small instrument out of his pocket.

"See this? If you press that button there it means you want a removal order. If they grant you one, they take you to the penance box for a spell."

"They?"

"The things what run this planet. The things that brought us here. How I wish they had let us die. Botega feels the same, I know it."

"What do you mean?"

"I mean Botega feels the same way as me and the boys. 'E knows what would 'appen if he didn't obey."

Mander explained how he had been plucked from the jaws of death, and how when Botega once captured him and his crew he had learnt that they too had been saved by a spaceship that lifted them from a pack of Japanese torpedo boats in the South Pacific. He also told of the other inhabitants of the planet. All fugitives, all saved from certain death and now forced to fight their fellow fugitives from different times in the earth's history.

"This Botega. Is there any chance of me getting to talk to him?"

"Not without them knowing. If you don't fight you go to the penance box. I'd rather die than go there again."

The Doctor listened whilst Mander told him of the small bird-like creatures that had brought him to the planet. How they were protected by a force field round their bodies, how everyone that they brought back had undergone a terrible physical transformation, their entire bodies changing substance. Some of his crew were marble, some coal, some water. Botega himself was made of glass.

"If you are willing to trust me I have a plan . . ." The Doctor spoke feverishly while Mander and One-Eye listened, nodding their heads from time to time.

Another sailor, made entirely of what seemed to be jade, called from the crow's nest: "She's getting closer. They'll be opening fire soon!"

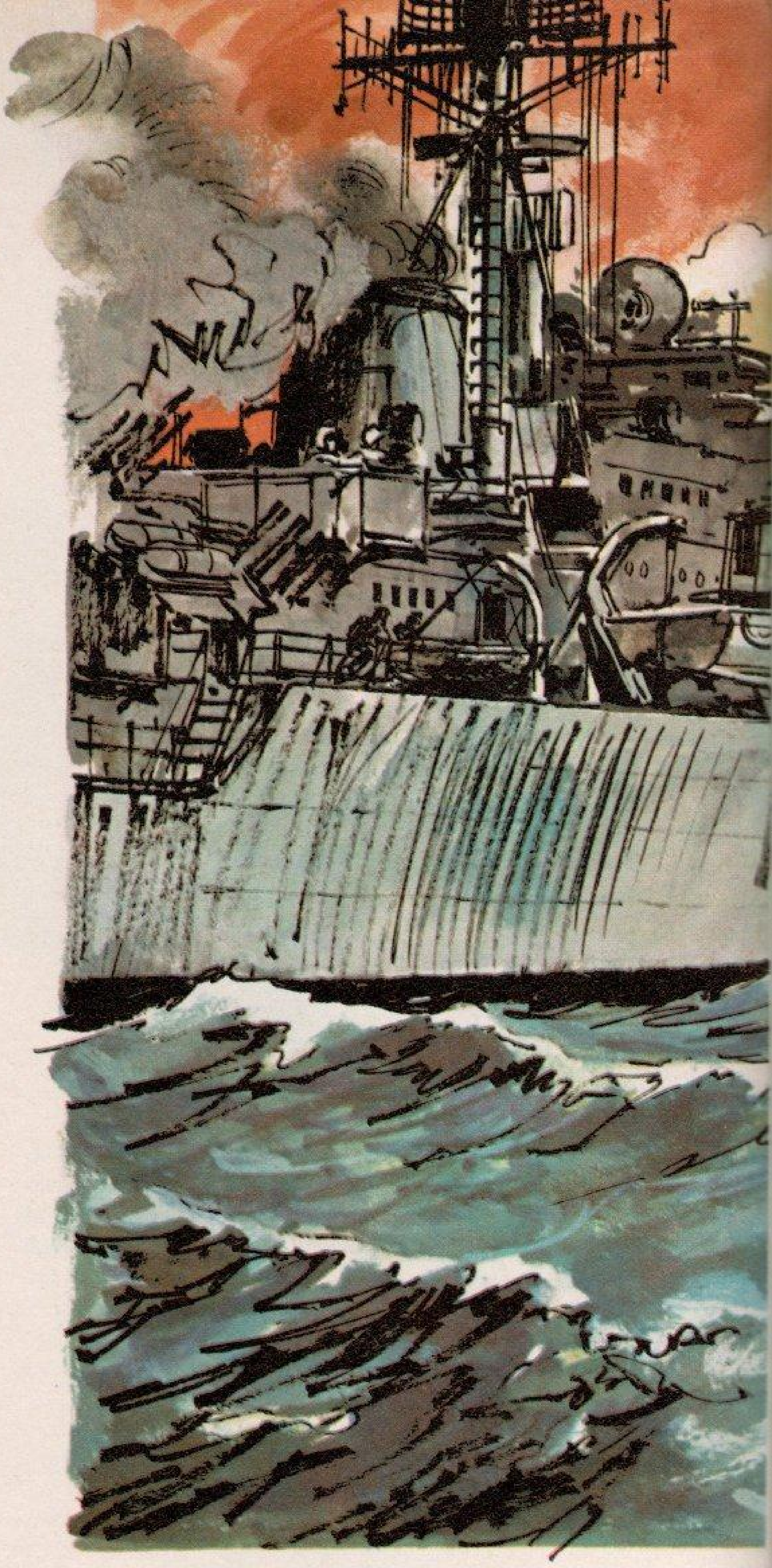
Mander looked up to see Botega's cruiser getting closer and closer.

"One-Eye, get the men ready. Swing 'er round and head right for them. This is it!"

The metal ship swung round and headed directly for the cruiser. The cruiser fired a couple of shots, but they did not come very close.

The Doctor climbed into the *Tardis*, which was attached by metal ropes to the side of the ship, and tried to raise Botega on the radio. At last he got through.

"This is most urgent. I must speak with your captain."

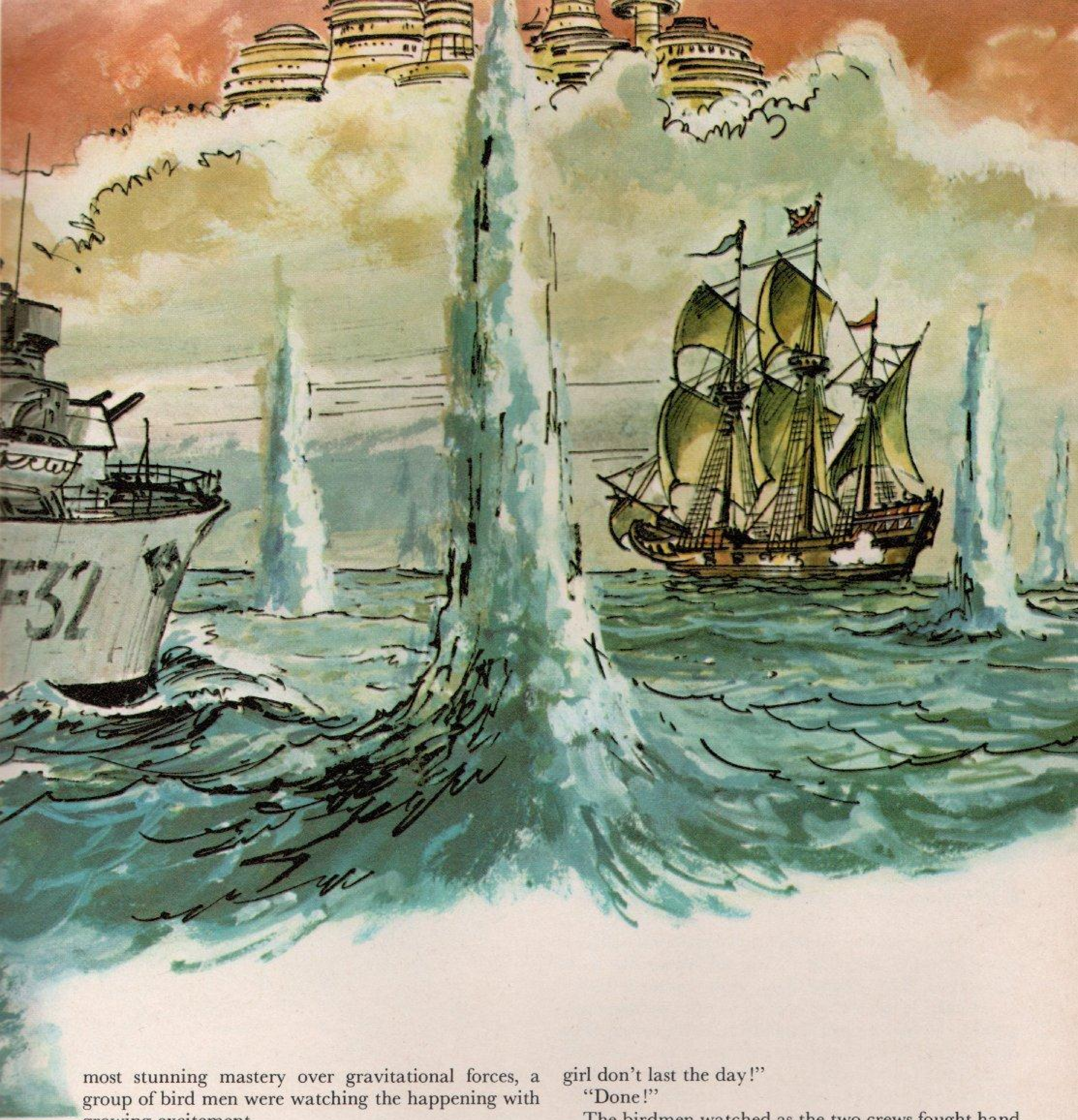


The radio officer was reluctant but at last Botega was summoned.

"Captain Botega? This is the Doctor. You are all in terrible danger. I have a plan."

The glass captain listened silently to the Doctor's plan, then shook his head with a sigh. "What have we got to lose? All right I'll give it a try."

High up among the clouds, in a city that showed the



most stunning mastery over gravitational forces, a group of bird men were watching the happening with growing excitement.

"Botega's firing to miss. I up ten meggalodes."

"Mander's out to kill himself. Sixteen meggalodes he won't use the removal button."

"I call for a rejection. You were too strong with him in the penance box."

"That was my privilege. No rejection!"

They chattered on, arguing in shrill voices, while the screen in front of them showed Mander's ship coming alongside Botega's and the pirates swarming on board.

"Hand to hand! Another ten meggalodes!"

"One hundred meggalodes that the human and the girl don't last the day!"

"Done!"

The birdmen watched as the two crews fought hand to hand, until at last the superior numbers of Botega's men won the day and Mander and his pirate crew were rounded up.

The glass captain addressed the Doctor. "Well, we have done our part. We have fought without killing. Now you must do yours."

"Are all your men on deck?"

"Yes."

"Then press the button for a removal order."

"But . . . But . . ."

"Damn it, man, do as I say! We're running short of time!"

Botega pressed the button and the bird like men became very agitated.

"Why has he done it?"

"He'd already won!"

"Send him into the penance box!"

"No! Bring him here! Bring them all here!"

"Yes! Bring them all here!"

Within minutes a spaceship had appeared above the two ships, the ray shot downwards and the ships disappeared. The spaceship sped upwards to the city in the sky and deposited the crew in a kind of arena, with huge electronic screens on each side.

Presently some of the birdmen appeared. "Botega, you asked for a removal order."

"Yes."

"But you had already captured Mander. Why did you do it?"

"Because I told him to!" Dr. Who stepped forward.

"Ah yes, the earthman with the tiny ship. Take care, fancy one."

"Why did you tell him to do it?"

"Because I wanted to see you. I knew his behaviour would make you investigate."

"Very clever. Why did you want to see us?"

The Doctor looked serious. "I wanted to know the purpose of all this. I wanted to know why you treat these people in this way. And I wanted to warn you that this planet is about to explode."

The birdmen looked shocked.

"Explode? What do you mean explode?"

"I mean exactly that. The energy level on this planet is already way past the danger mark, and it is getting higher all the time."

One of the birdmen, wearing a strange ornament on his head, stepped forward. "You show an amazing lack of perception for a man of your intelligence. You think because you were able to gain an audience with us that you understand us. You cannot. Let me explain . . ."

He took another step forward and opened his wings wide.

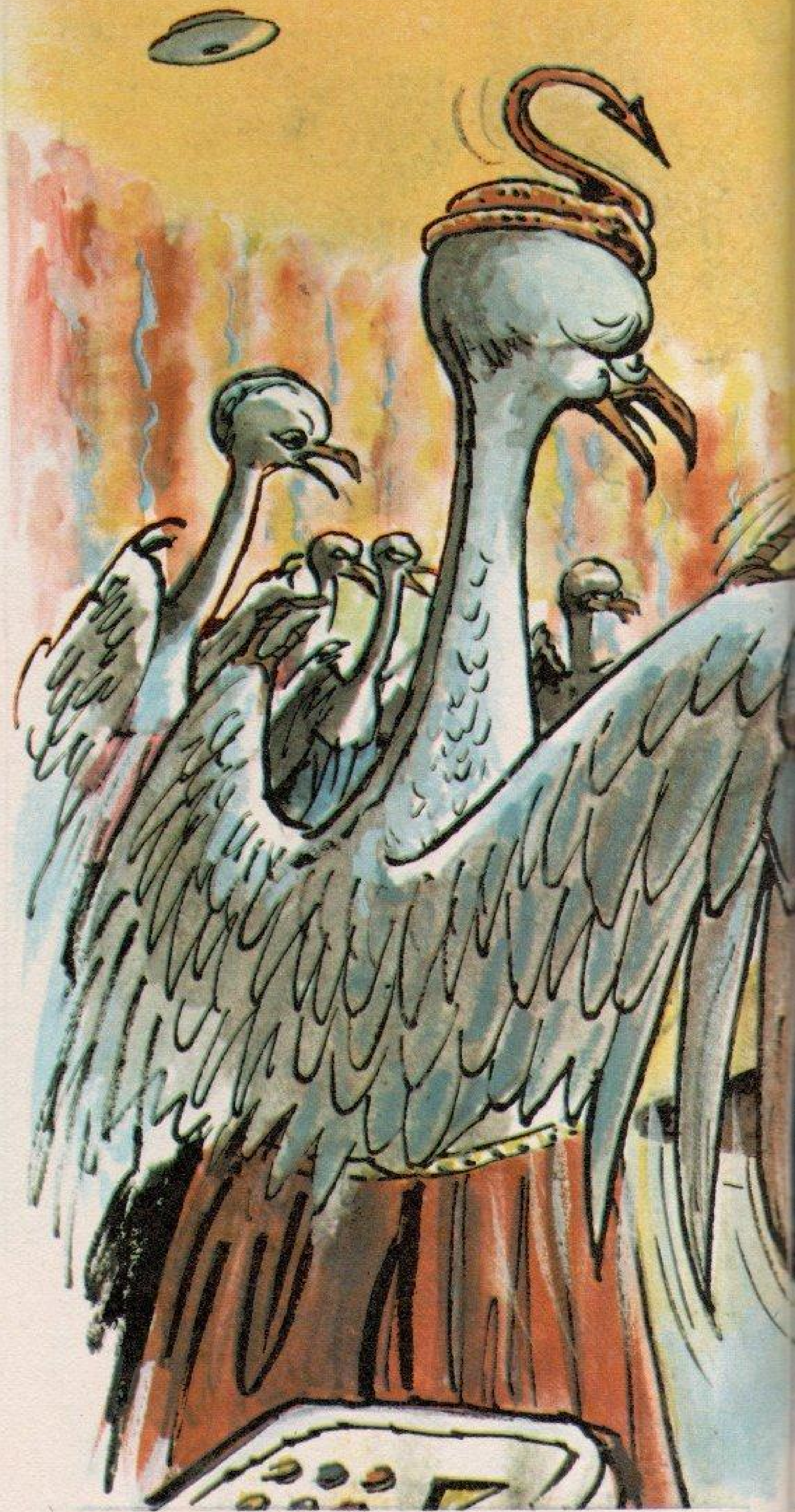
"Look around you. Look at this scientific marvel, this city suspended in the air. There are others like it on our planet. Hundreds of them. How do you think we built them, Doctor? We have no hands, we have none of your human strength. You humans are pitifully slow developers. We have been visiting your planet for hundreds of thousands of years. We have men here from ancient Egypt, men here from what you call prehistory. They are very much the same as you—arrogant, ignorant, desperate to survive . . ."

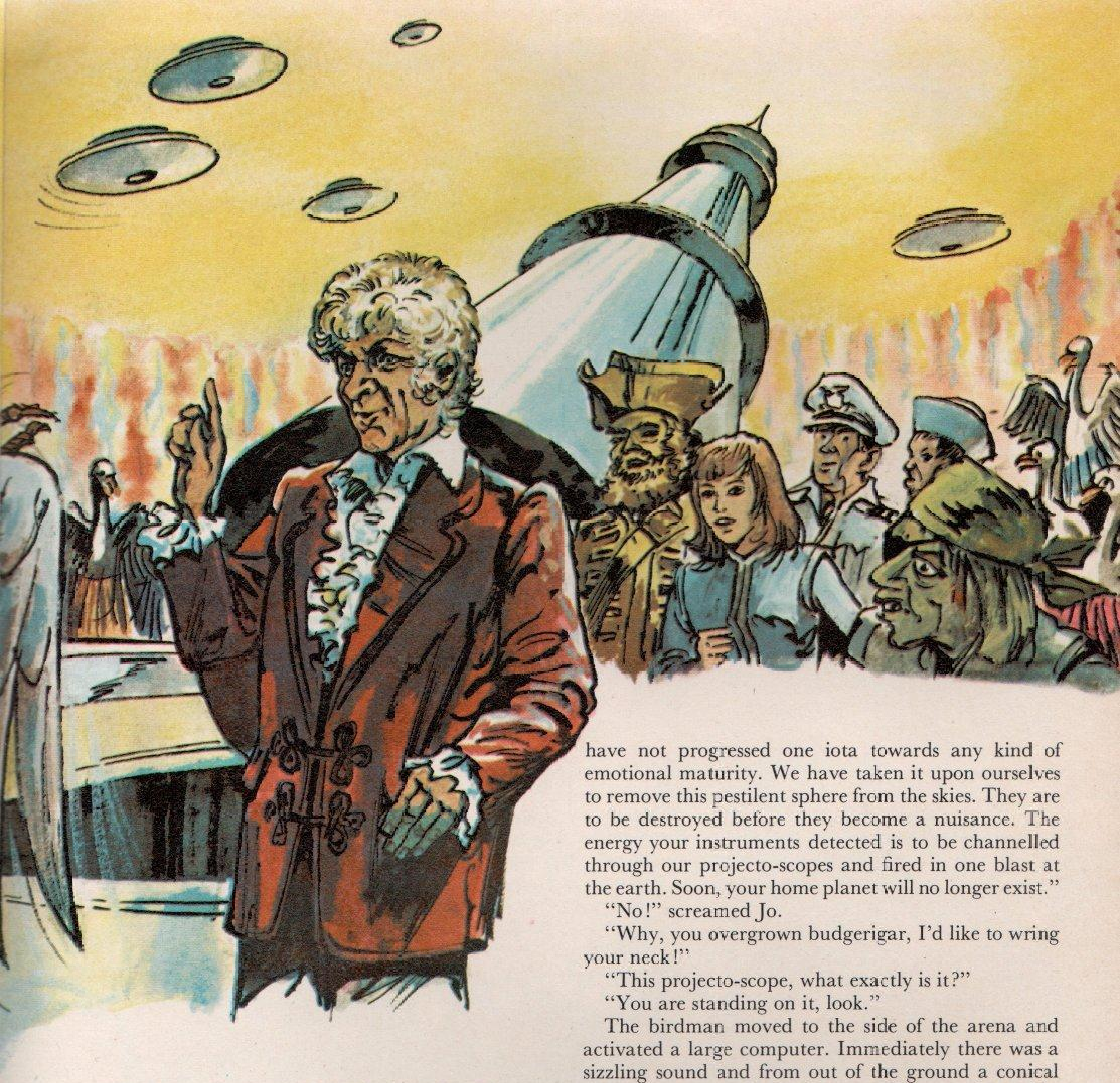
"But you—are you any better?"

"Better? What a typically human word—a concept engendered by fear. We are what we are. We have no particular wish to conquer, to interfere, we wish merely to amuse ourselves."

"And you do that by transforming normal people into—"

"Ah yes. Advanced though we are, we are not perfect. The transporter beam reacts peculiarly in the earth's atmosphere, which is slightly different from our own. The metamorphoses have been accidental. That is why you yourself remain unchanged. Anyway the body is not important for our amusement; it is the spirit that matters. The fugitive spirit, the unpredictability of the human race under stress, forms the basis of our games of chance. There is no other race in the universe so outrageously fearful of death as the humans of Earth. And well they might be, the lives they lead. The human fugitive is alert, wary, cautious, aggressive, totally selfish. More meggalodes than the human mind can comprehend have been won and lost over one desperate act. Chance is our lifeblood, the perfect amusement. We do not interfere, we merely observe and make wagers."





"Well you'd better cash in while you can, because the instruments on my ship show an energy build-up no planet could hope to support!"

The birdman sighed wearily.

"Your instruments are accurate enough, but your guesswork is abysmal. Do you think such a build up could go unnoticed? Do you have the arrogance to suggest that such a massive concentration of energy is unintentional, that it could have no purpose? As I have said before, we are not a warlike people. We prefer peaceful coexistence. But our recent visits to earth have convinced us that something must be done. Already they are struggling through the rudimentaries of space travel, but at the same time they have polluted their lands and their seas, they have stocked more explosives than are needed to blow the entire planet up, and they have not progressed one iota towards any kind of emotional maturity. We have taken it upon ourselves to remove this pestilent sphere from the skies. They are to be destroyed before they become a nuisance. The energy your instruments detected is to be channelled through our projecto-scopes and fired in one blast at the earth. Soon, your home planet will no longer exist."

"No!" screamed Jo.

"Why, you overgrown budgerigar, I'd like to wring your neck!"

"This projecto-scope, what exactly is it?"

"You are standing on it, look."

The birdman moved to the side of the arena and activated a large computer. Immediately there was a sizzling sound and from out of the ground a conical object rose upwards. On the top of it was a pin so thin it could barely be seen.

"This is the projecto-scope. The energy will be directed at earth in a beam so concentrated as to defy the imagination. The beam will come from this microscopic tube, small enough to tattoo a flea. It will strike the earth at the weakest point along the San Andreas' fault. The earth will shatter and cease to plague the more advanced civilisations with their pathetic threshing and misguided search for identity."

The Doctor stepped forward.

"I'll make a wager you don't do it."

A murmur went round the group of birdmen.

"A wager? You are in no position to make a wager."

"I have our lives and the lives of every person on earth against your own."

The birdman trilled derisively.

"You mean *we* have your lives and the lives of the earth's population." He paused and his voice took on a serious note. "We also have our own."

"You can never destroy earth."

As if at some pre-arranged signal, Mander, Botega and their crewmen rushed towards the projecto-scope, making as much noise as possible. They had almost reached it when they were thrown suddenly back by a force field that sprung up between them and the weapon. At this moment the Doctor leapt forward and grabbed the birdman leader round the neck.

"Don't try anything!" he yelled.

The whole arena went still. The Doctor spoke.

"Is the wager on?"

The birdman did not speak.

"Is the wager on?"

"It is on."

"Then order the store of energy to be dispersed into space. I knew you would have to remove your own protective force field in order to set up another round the projecto-scope. You must order it now or I shall have no option but to—"

"Disperse the energy."

"Thank you. And now, if you could provide a ship for the fugitives on this planet so that they might search for a happier place to live out their days in peace?"

"It shall be done. A Melovian always honours the wager."

The Doctor released his grip on the despondent birdman.

"Did you say Melovian?"

"Yes, we are Melovians. Banished from our planet so many hundreds and thousands of years ago. Life there seemed tame to us, the peace, security, the constant pursuit of aesthetic perfection. We wanted excitement, the thrill of life; we wanted to awaken those primitive urges that had been buried under so many lifetimes of education and advancement." He held his wing up to the Doctor. "I apologise, Doctor—I misjudged you and your race. Perhaps we have become lazy in our ways, perhaps it is time once again to examine our logic. But chance, the defier of every known force, the unlocked secret, the one true unfathomable! It's very inescapability fascinated us beyond our beliefs. Perhaps we shall temper our further experiments with more compassion, more humility. I thank you, Doctor."

"And I thank you, sir. Come on, Jo, let's get cracking or we're going to be late for the ceremony!"

And after saying goodbye to Mander, Botega and the rest of the crew, Jo and the Doctor climbed into the *Tardis* and set off for Rojak.

"How come you know the Melovians?" asked Jo.

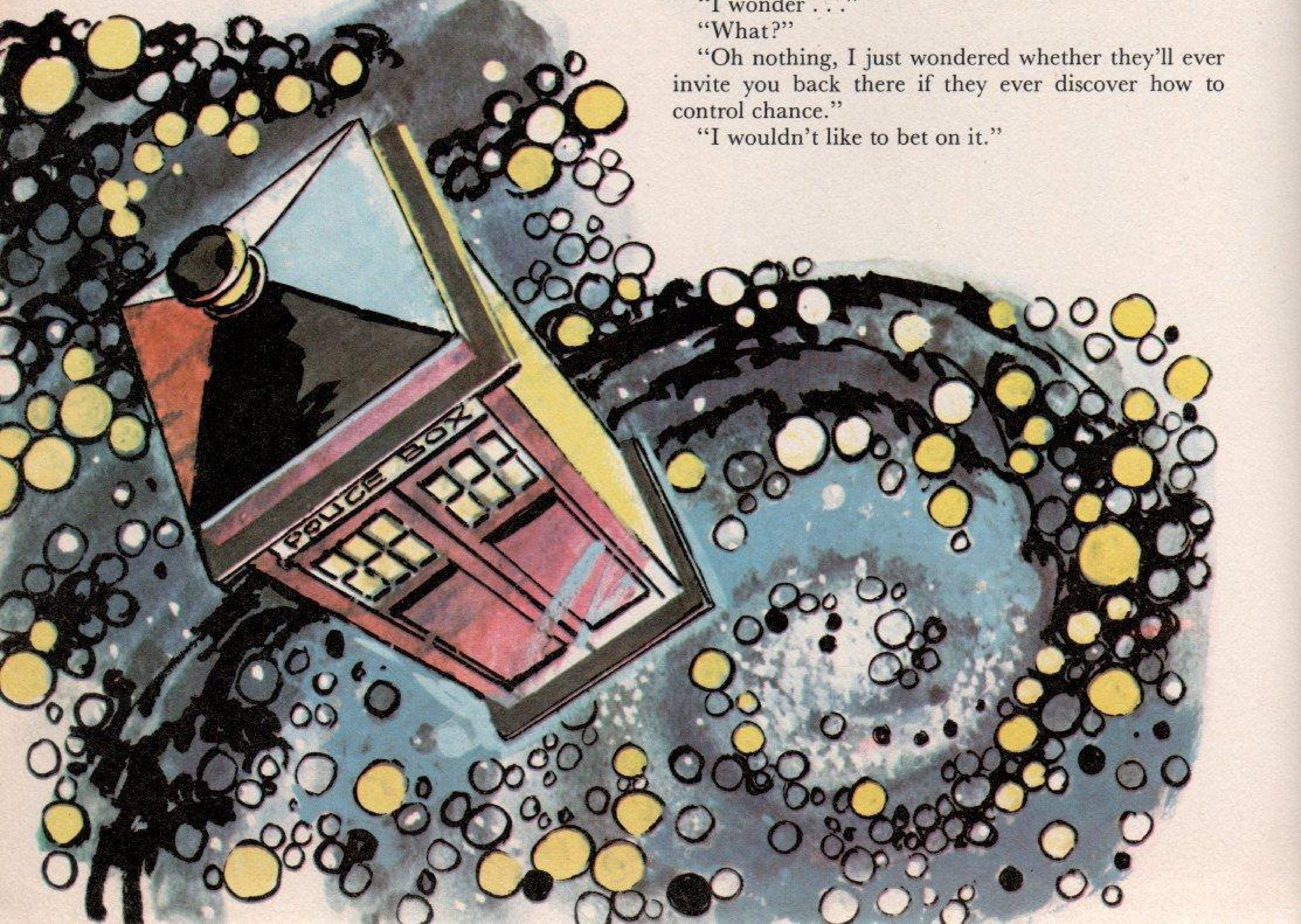
"One of the wisest races in the Universe, a very unassuming people. Not like these Rojakians. A right bunch of cut throats and liars they used to be."

"I wonder . . ."

"What?"

"Oh nothing, I just wondered whether they'll ever invite you back there if they ever discover how to control chance."

"I wouldn't like to bet on it."



# secret of the moon rocks

The world watched and waited in excitement when the Apollo astronauts brought those famous Moon rocks back to Earth. And scientists everywhere thought that their theories about the evolution of the Moon would probably be completely confirmed.

But those chunks of rock had some surprising secrets to reveal . . .

The most widely-held recent theory about the Moon was that it was a huge piece of our planet Earth, torn away in some gigantic explosion or storm millions of years ago. Scientists and astronomers believed that this huge piece of the Earth had then gone into orbit around the Earth, and become our natural satellite.

But the results of tests and experiments carried out with the Moon rocks did not seem to fit in neatly with this theory.

Scientists calculated that the rocks brought back by the astronauts were at least 4,000 million years old; the oldest of any rocks studied on Earth have only been 3,500 million years old. So the Moon is apparently older than the Earth, and therefore could not once have been part of it.

Further tests backed this up. The Moon rocks contained large amounts of such metal as chromium, titanium and yttrium, metals which have never been found in such concentrations in Earth rocks.

Working with all the evidence the Moon rocks provided, and helped by the information the astronauts could pass on, scientists were able to revise their theories of the evolution of the Moon.

They now believe that the Moon is a planet in its own right, and not a mere satellite of the Earth.

They have calculated that about 2,000 million years ago, the planet which man has called 'Moon' was in orbit around the Sun, as was the Earth. Gradually, the Earth and the Moon may have moved closer together, and the Earth may have captured the Moon in the tremendous pull of its gravity. The Earth probably pulled the Moon closer and closer, until at last they were only a few thousand miles apart – a very small distance in the vast reaches of space.

At this close distance the gravitational pull of the Moon would begin to 'fight' back, and a tremendous 'conflict' would begin.

## BATTLE IN SPACE

There would be earthquakes, explosions, erupting volcanoes, and incredible devastation on both planets. Any life which might have existed on them – and indeed there may well have been life, as they were both at suitable distances from the Sun – would have been completely destroyed, leaving only microscopic bacteria on Earth.

The Moon would, of course, have come off worse in the 'battle', as it was the smaller planet. The atmosphere of the Moon may have been entirely stripped away, and huge rocks and boulders may have come away from its surface.

This might account for those famous craters we have seen in photographs of the Moon – some of them might have been caused by the rocks and boulders falling back onto the surface of the Moon.

At last the Moon began to move away from Earth once more, but this time to orbit round the Earth. And now, of course, it is 240,000 miles from us, and gradually – though *very* gradually – moving further away.

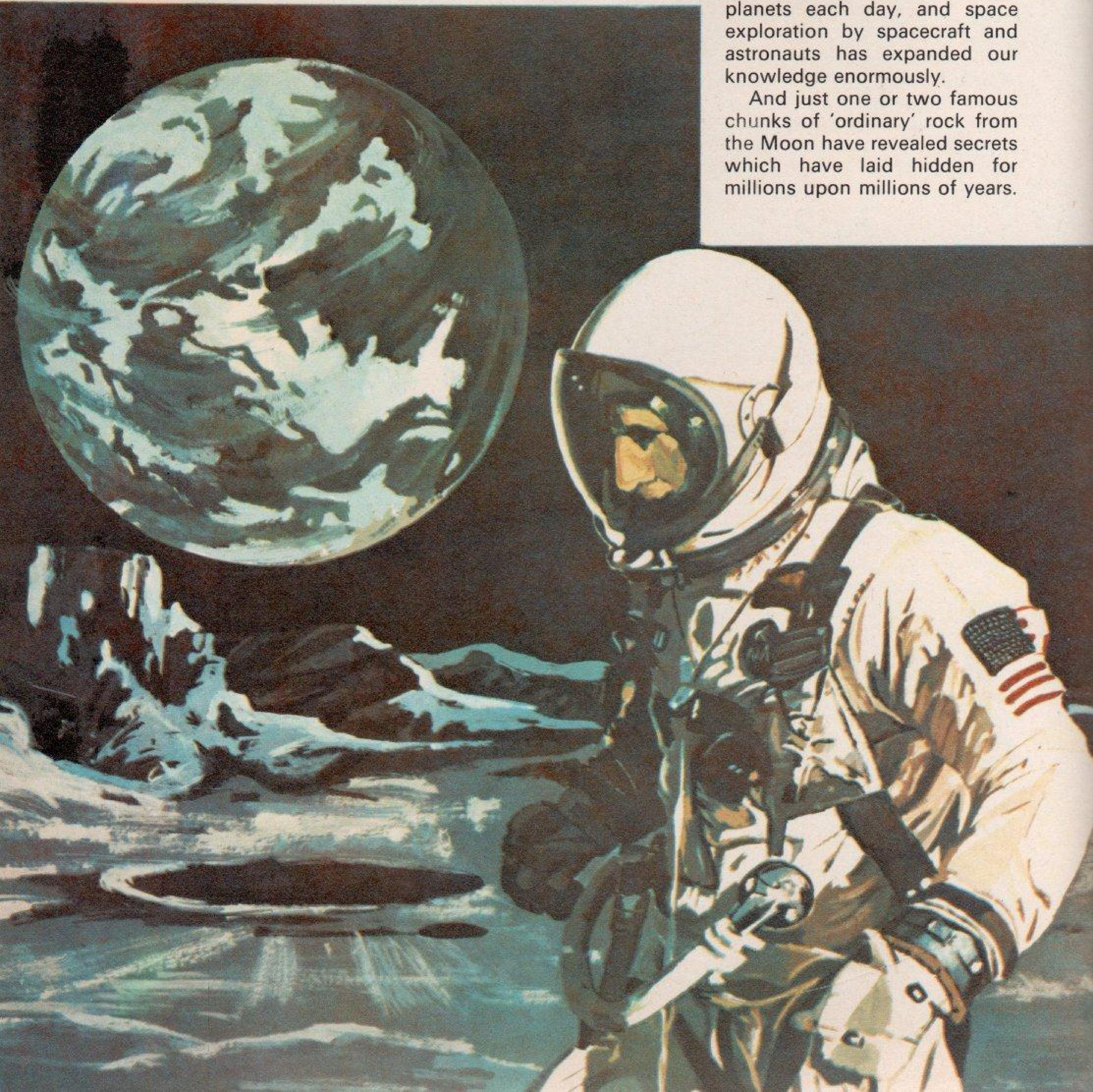
Scientists believe that it may eventually look just like a star in our sky – but that won't be for about 20,000 million years, so that gives you an idea of how slowly it is moving away!

When the great 'battle' in space was over between the Moon and the Earth, the planets began to settle down once more, and we know that life came to the Earth again, in animals, plants, fish, and man.

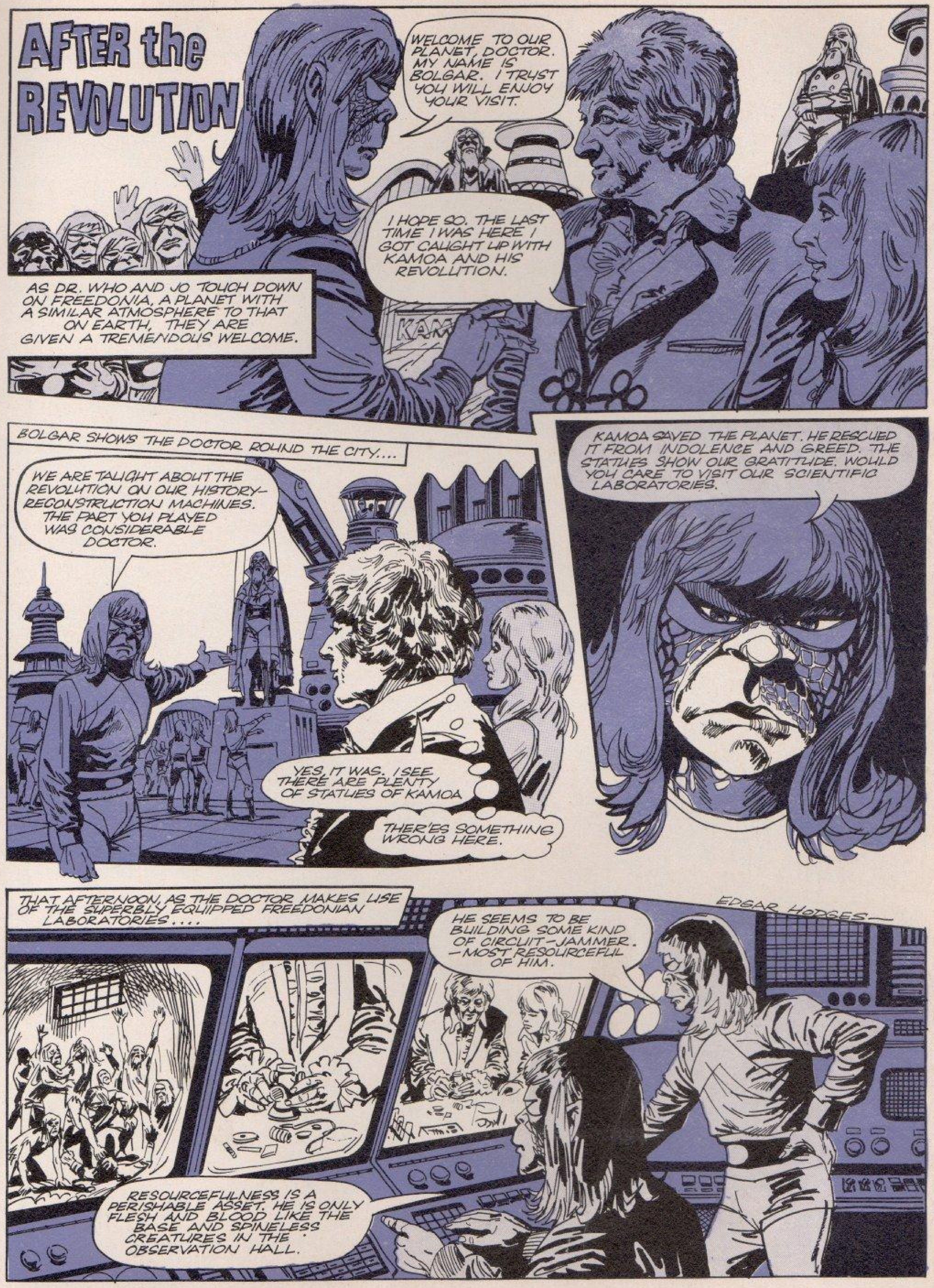
But the Moon remained barren and bleak, and the astronauts found no evidence of life of any kind.

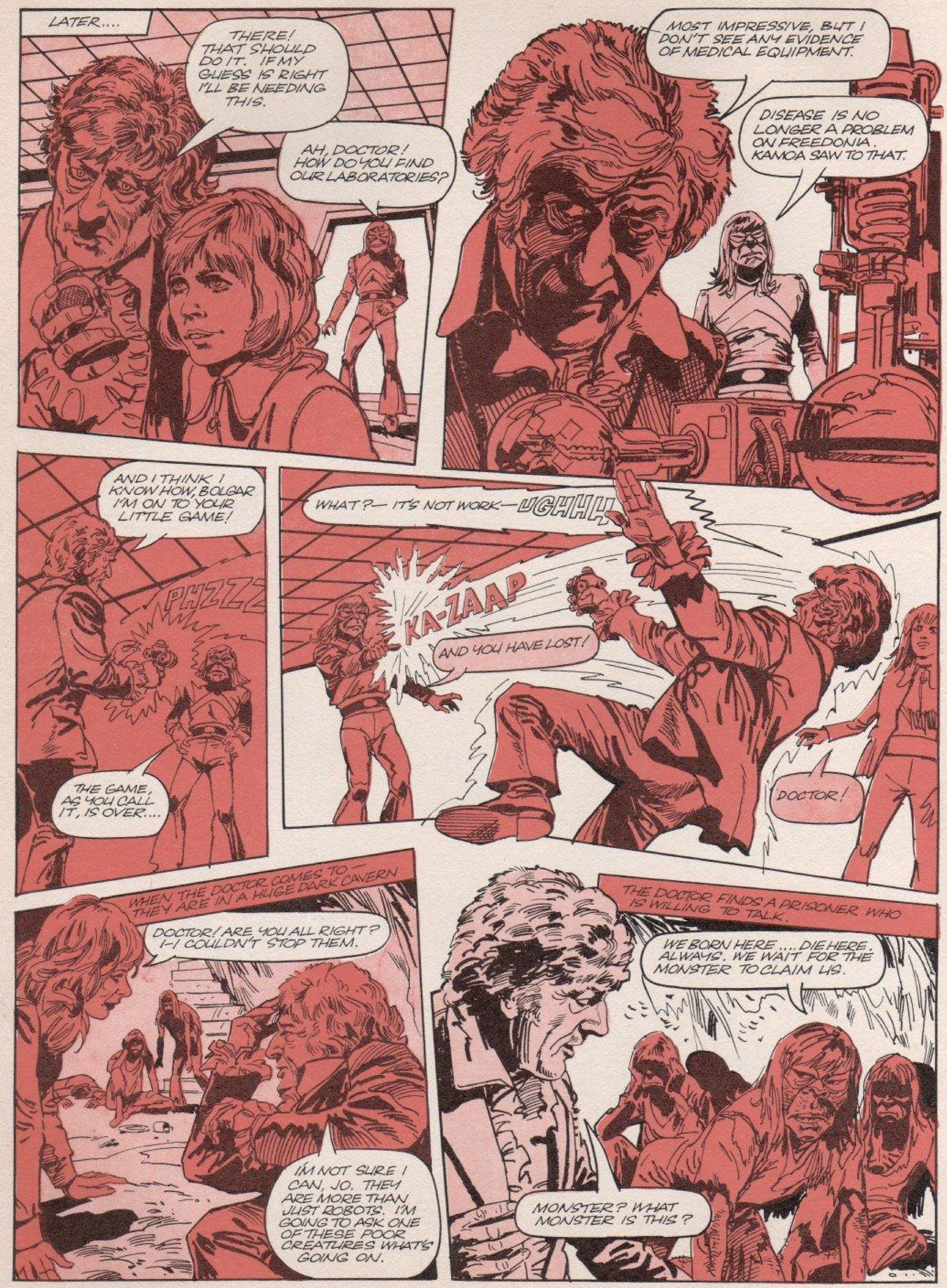
We are learning more and more about the Moon and the planets each day, and space exploration by spacecraft and astronauts has expanded our knowledge enormously.

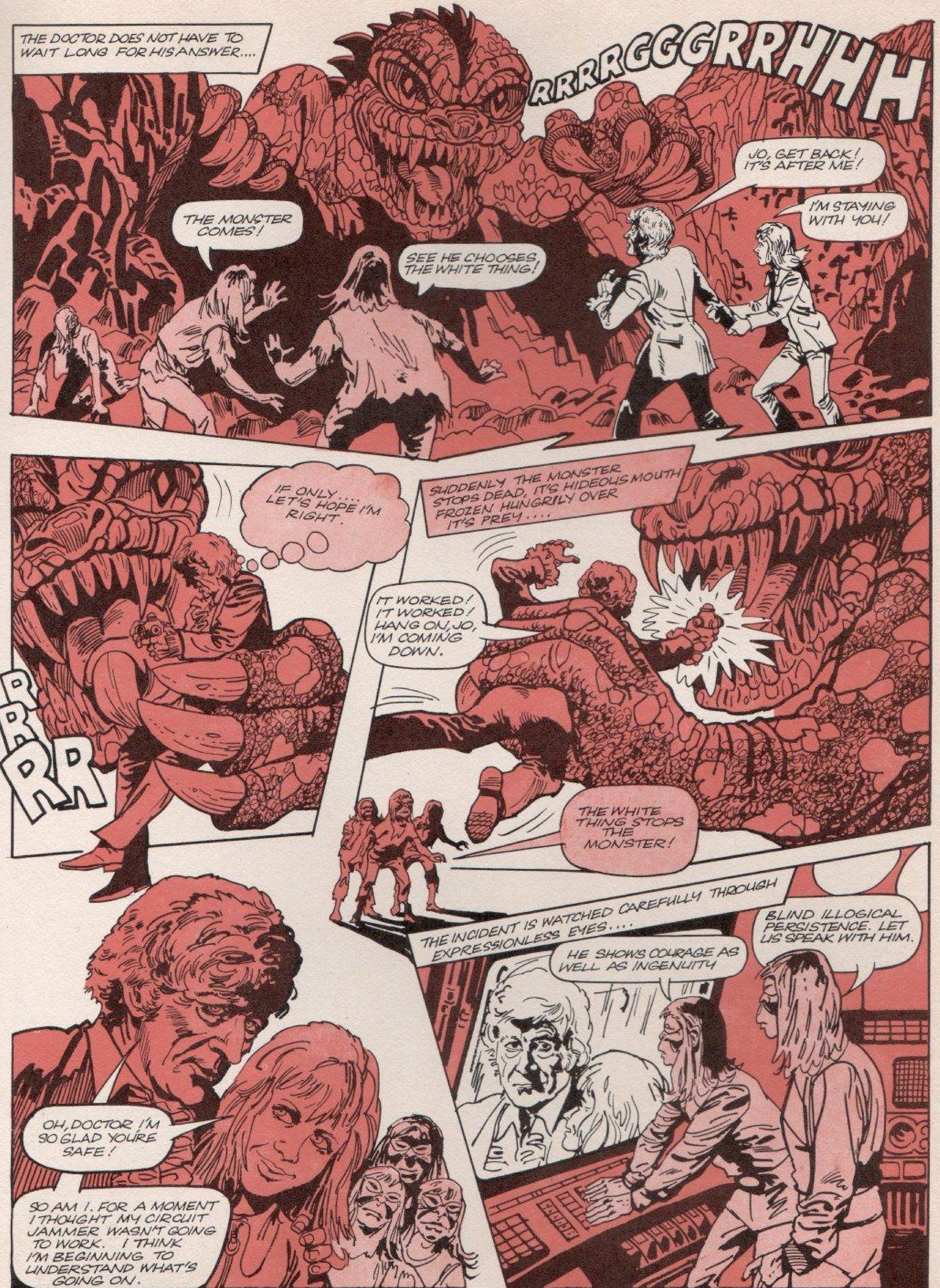
And just one or two famous chunks of 'ordinary' rock from the Moon have revealed secrets which have laid hidden for millions upon millions of years.

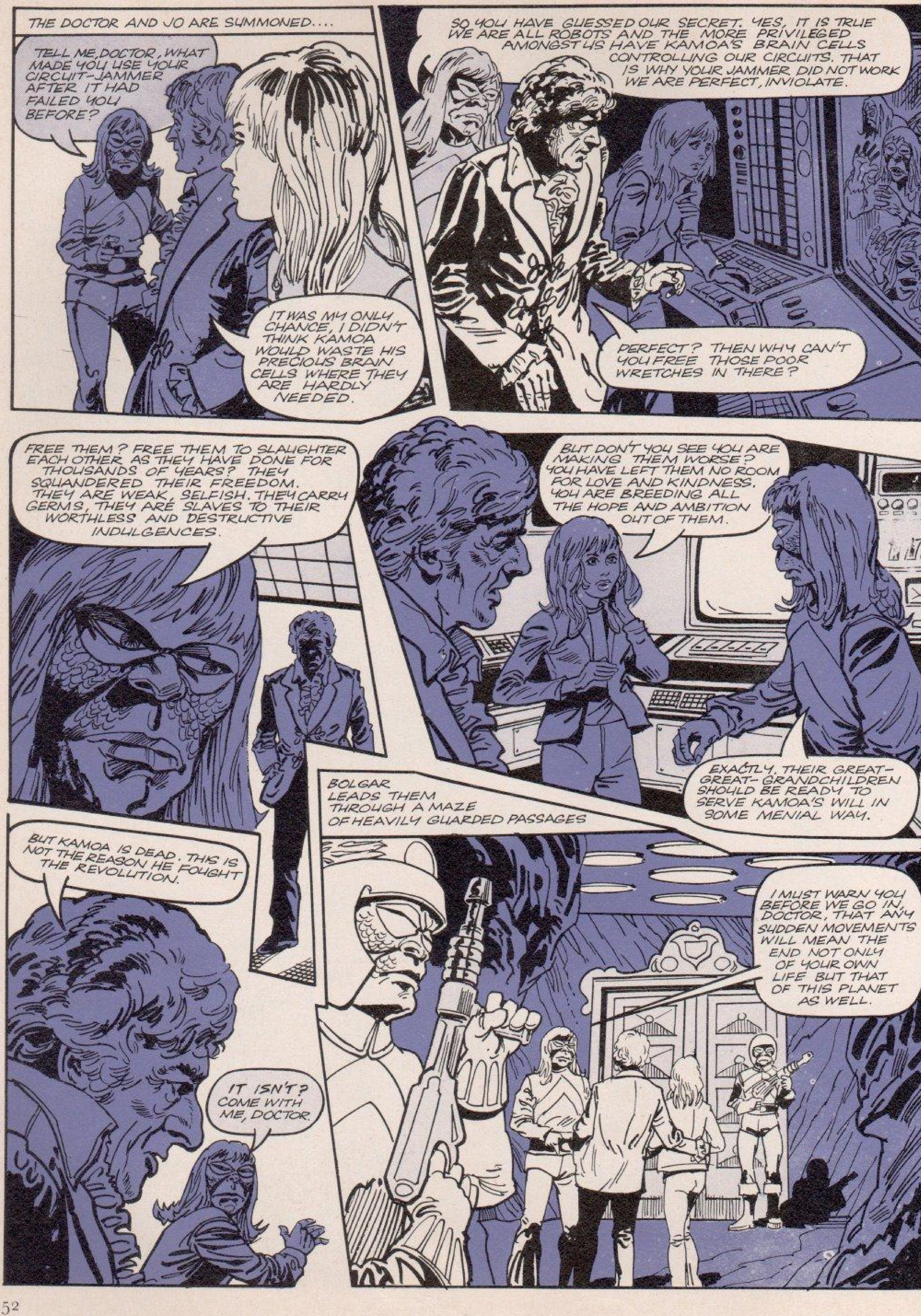


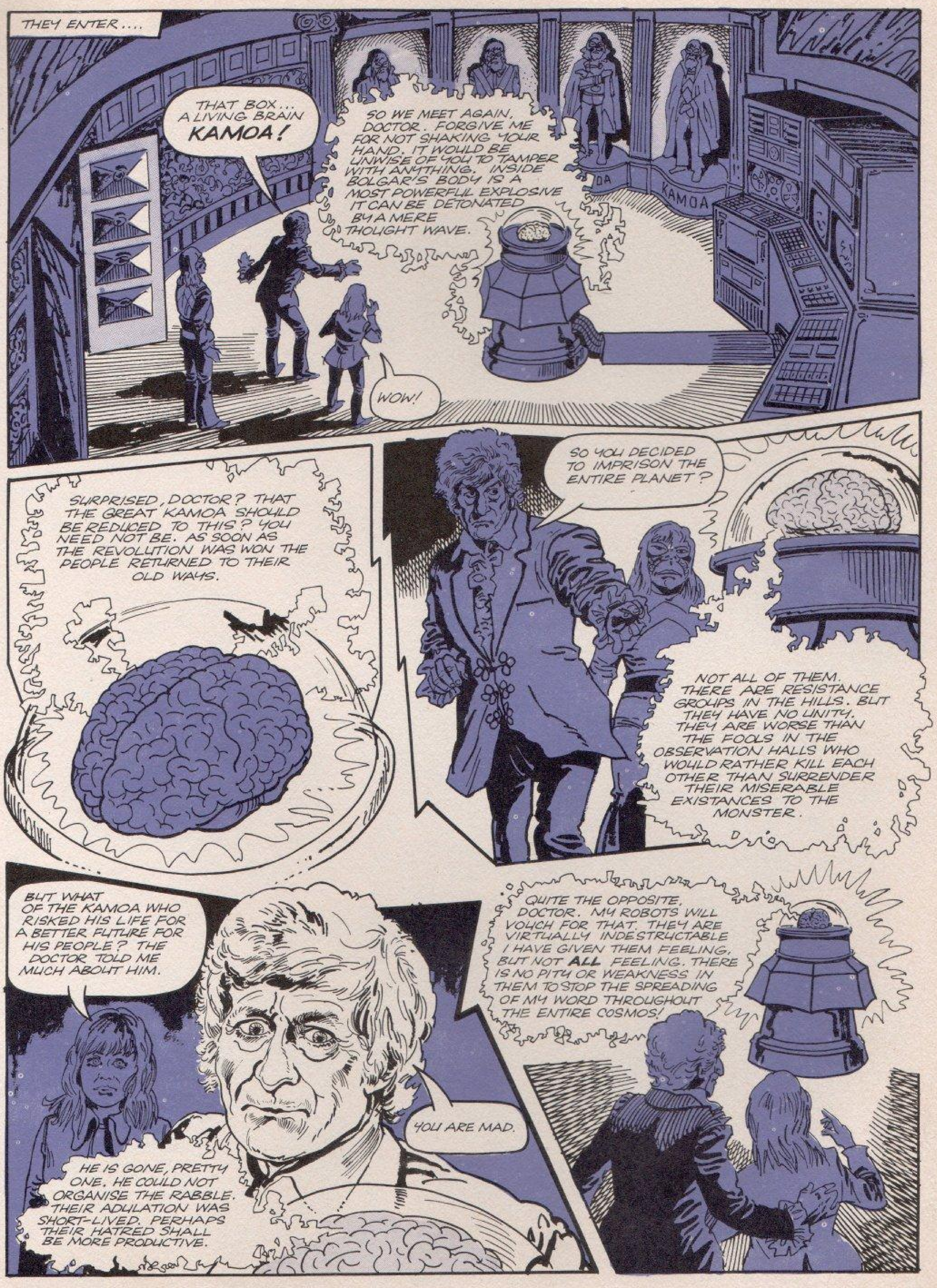
# AFTER the REVOLUTION

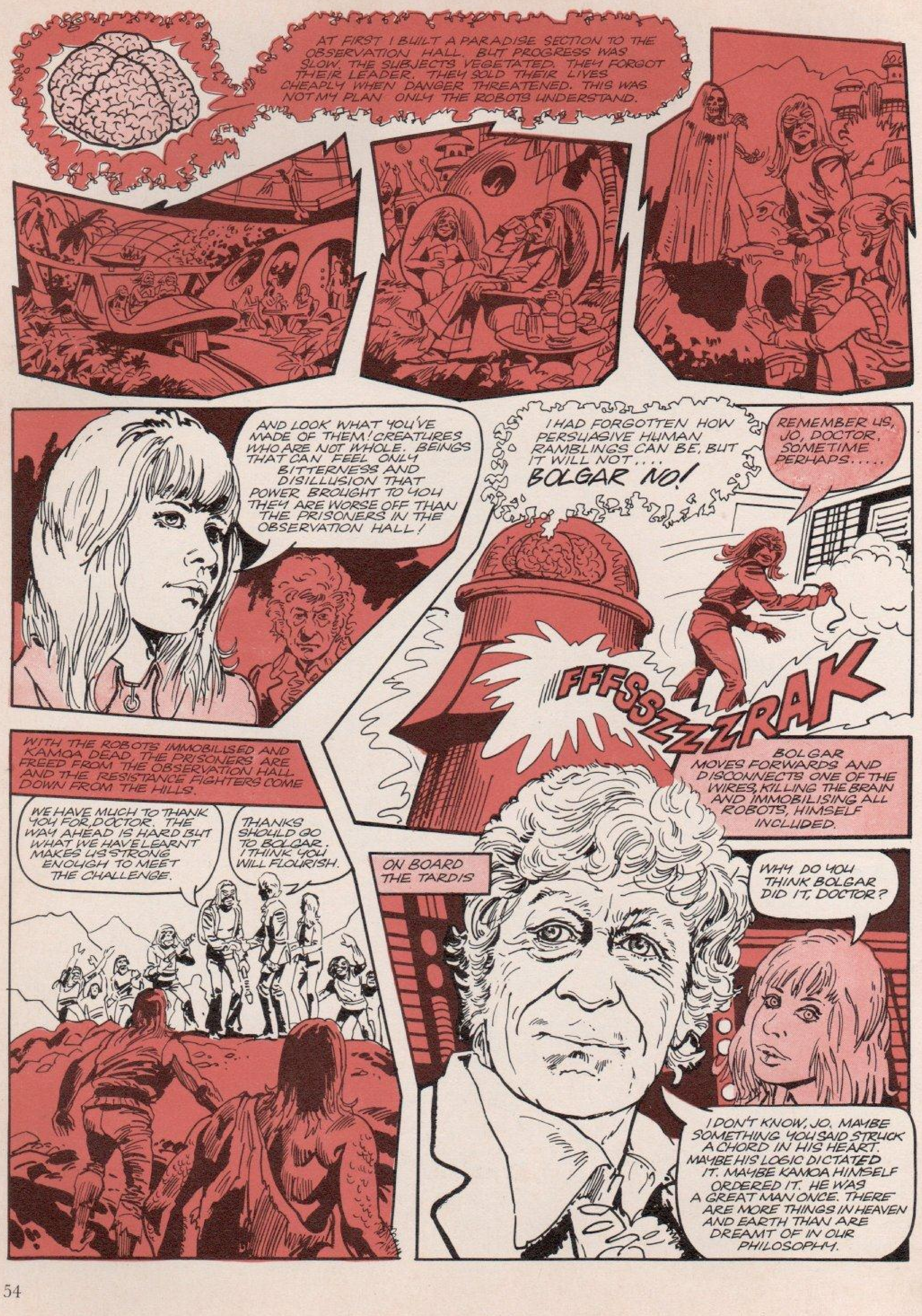

AS DR. WHO AND JO TOUCH DOWN ON FREEDONIA, A PLANET WITH A SIMILAR ATMOSPHERE TO THAT ON EARTH, THEY ARE GIVEN A TREMENDOUS WELCOME.
WELCOME TO OUR PLANET, DOCTOR. MY NAME IS BOLGAR. I TRUST YOU WILL ENJOY YOUR VISIT.
I HOPE SO. THE LAST TIME I WAS HERE I GOT CAUGHT UP WITH KAMOA AND HIS REVOLUTION.
KAMOA
BOLGAR SHOWS THE DOCTOR ROUND THE CITY....
WE ARE TAUGHT ABOUT THE REVOLUTION ON OUR HISTORY-RECONSTRUCTION MACHINES. THE PART YOU PLAYED WAS CONSIDERABLE DOCTOR.
YES, IT WAS. I SEE THERE ARE PLENTY OF STATUES OF KAMOA
THERE'S SOMETHING WRONG HERE.
KAMOA SAVED THE PLANET. HE RESCUED IT FROM INDOLENCE AND GREED. THE STATUES SHOW OUR GRATITUDE. WOULD YOU CARE TO VISIT OUR SCIENTIFIC LABORATORIES.
THAT AFTERNOON, AS THE DOCTOR MAKES USE OF THE SUPERBLY EQUIPPED FREEDONIAN LABORATORIES....
EDGAR HODGES
HE SEEMS TO BE BUILDING SOME KIND OF CIRCUIT-JAMMER. —MOST RESOURCEFUL OF HIM.
RESOURCEFULNESS IS A PERISHABLE ASSET. HE IS ONLY FLESH AND BLOOD LIKE THE BASE AND SPINELESS CREATURES IN THE OBSERVATION HALL.


LATER....
THERE! THAT SHOULD DO IT. IF MY GUESS IS RIGHT I'LL BE NEEDING THIS.
AH, DOCTOR! HOW DO YOU FIND OUR LABORATORIES?
MOST IMPRESSIVE, BUT I DON'T SEE ANY EVIDENCE OF MEDICAL EQUIPMENT.
DISEASE IS NO LONGER A PROBLEM ON FREEDONIA. KAMOA SAW TO THAT.
AND I THINK I KNOW HOW, BOLGAR I'M ON TO YOUR LITTLE GAME!
PHZZZ
THE GAME, AS YOU CALL IT, IS OVER....
WHAT?— IT'S NOT WORK—UGHHH!
KA-ZAAP
AND YOU HAVE LOST!
DOCTOR!
WHEN THE DOCTOR COMES TO— THEY ARE IN A HUGE DARK CAVERN
DOCTOR! ARE YOU ALL RIGHT? I-I COULDN'T STOP THEM.
I'M NOT SURE I CAN, JO. THEY ARE MORE THAN JUST ROBOTS. I'M GOING TO ASK ONE OF THESE POOR CREATURES WHAT'S GOING ON.
THE DOCTOR FINDS A PRISONER WHO IS WILLING TO TALK.
WE BORN HERE .... DIE HERE. ALWAYS. WE WAIT FOR THE MONSTER TO CLAIM US.
MONSTER? WHAT MONSTER IS THIS?


THE DOCTOR DOES NOT HAVE TO WAIT LONG FOR HIS ANSWER....
RRRRGGGRRHHHH
THE MONSTER COMES!
SEE HE CHOOSES, THE WHITE THING!
JO, GET BACK! IT'S AFTER ME!
I'M STAYING WITH YOU!
IF ONLY.... LET'S HOPE I'M RIGHT.
RRRR
SUDDENLY THE MONSTER STOPS DEAD, IT'S HIDEOUS MOUTH FROZEN HUNGRILY OVER IT'S PREY....
IT WORKED! IT WORKED! HANG ON, JO, I'M COMING DOWN.
THE WHITE THING STOPS THE MONSTER!
OH, DOCTOR I'M SO GLAD YOU'RE SAFE!
SO AM I. FOR A MOMENT I THOUGHT MY CIRCUIT JAMMER WASN'T GOING TO WORK. I THINK I'M BEGINNING TO UNDERSTAND WHAT'S GOING ON.
THE INCIDENT IS WATCHED CAREFULLY THROUGH EXPRESSIONLESS EYES....
HE SHOWS COURAGE AS WELL AS INGENUITY
BLIND ILLOGICAL PERSISTENCE. LET US SPEAK WITH HIM.


THE DOCTOR AND JO ARE SUMMONED....
TELL ME, DOCTOR, WHAT MADE YOU USE YOUR CIRCUIT-JAMMER AFTER IT HAD FAILED YOU BEFORE?
IT WAS MY ONLY CHANCE, I DIDN'T THINK KAMOA WOULD WASTE HIS PRECIOUS BRAIN CELLS WHERE THEY ARE HARDLY NEEDED.
SO YOU HAVE GUESSED OUR SECRET. YES, IT IS TRUE WE ARE ALL ROBOTS AND THE MORE PRIVILEGED AMONGST US HAVE KAMOA'S BRAIN CELLS CONTROLLING OUR CIRCUITS. THAT IS WHY YOUR JAMMER DID NOT WORK WE ARE PERFECT, INVIOLATE.
PERFECT? THEN WHY CAN'T YOU FREE THOSE POOR WRETCHES IN THERE?
FREE THEM? FREE THEM TO SLAUGHTER EACH OTHER AS THEY HAVE DONE FOR THOUSANDS OF YEARS? THEY SQUANDERED THEIR FREEDOM. THEY ARE WEAK, SELFISH. THEY CARRY GERMS, THEY ARE SLAVES TO THEIR WORTHLESS AND DESTRUCTIVE INDULGENCES.
BUT DON'T YOU SEE YOU ARE MAKING THEM WORSE? YOU HAVE LEFT THEM NO ROOM FOR LOVE AND KINDNESS. YOU ARE BREEDING ALL THE HOPE AND AMBITION OUT OF THEM.
EXACTLY. THEIR GREAT-GREAT-GRANDCHILDREN SHOULD BE READY TO SERVE KAMOA'S WILL IN SOME MENIAL WAY.
BUT KAMOA IS DEAD. THIS IS NOT THE REASON HE FOUGHT THE REVOLUTION.
IT ISN'T? COME WITH ME, DOCTOR.
BOLGAR LEADS THEM THROUGH A MAZE OF HEAVILY GUARDED PASSAGES
I MUST WARN YOU BEFORE WE GO IN, DOCTOR, THAT ANY SUDDEN MOVEMENTS WILL MEAN THE END NOT ONLY OF YOUR OWN LIFE BUT THAT OF THIS PLANET AS WELL.


THEY ENTER....
THAT BOX... A LIVING BRAIN **KAMOA!**
SO WE MEET AGAIN, DOCTOR. FORGIVE ME FOR NOT SHAKING YOUR HAND. IT WOULD BE UNWISE OF YOU TO TAMPER WITH ANYTHING. INSIDE BOLGAR'S BODY IS A MOST POWERFUL EXPLOSIVE IT CAN BE DETONATED BY A MERE THOUGHT WAVE.
DA
KAMOA
WOW!
SURPRISED, DOCTOR? THAT THE GREAT KAMOA SHOULD BE REDUCED TO THIS? YOU NEED NOT BE. AS SOON AS THE REVOLUTION WAS WON THE PEOPLE RETURNED TO THEIR OLD WAYS.
SO YOU DECIDED TO IMPRISON THE ENTIRE PLANET?
NOT ALL OF THEM. THERE ARE RESISTANCE GROUPS IN THE HILLS. BUT THEY HAVE NO UNITY. THEY ARE WORSE THAN THE FOOLS IN THE OBSERVATION HALLS WHO WOULD RATHER KILL EACH OTHER THAN SURRENDER THEIR MISERABLE EXISTANCES TO THE MONSTER.
BUT WHAT OF THE KAMOA WHO RISKED HIS LIFE FOR A BETTER FUTURE FOR HIS PEOPLE? THE DOCTOR TOLD ME MUCH ABOUT HIM.
HE IS GONE, PRETTY ONE. HE COULD NOT ORGANISE THE RABBLE. THEIR ADULATION WAS SHORT-LIVED. PERHAPS THEIR HATRED SHALL BE MORE PRODUCTIVE.
YOU ARE MAD.
QUITE THE OPPOSITE, DOCTOR. MY ROBOTS WILL VOUCH FOR THAT. THEY ARE VIRTUALLY INDESTRUCTABLE I HAVE GIVEN THEM FEELING, BUT NOT **ALL** FEELING. THERE IS NO PITY OR WEAKNESS IN THEM TO STOP THE SPREADING OF MY WORD THROUGHOUT THE ENTIRE COSMOS!

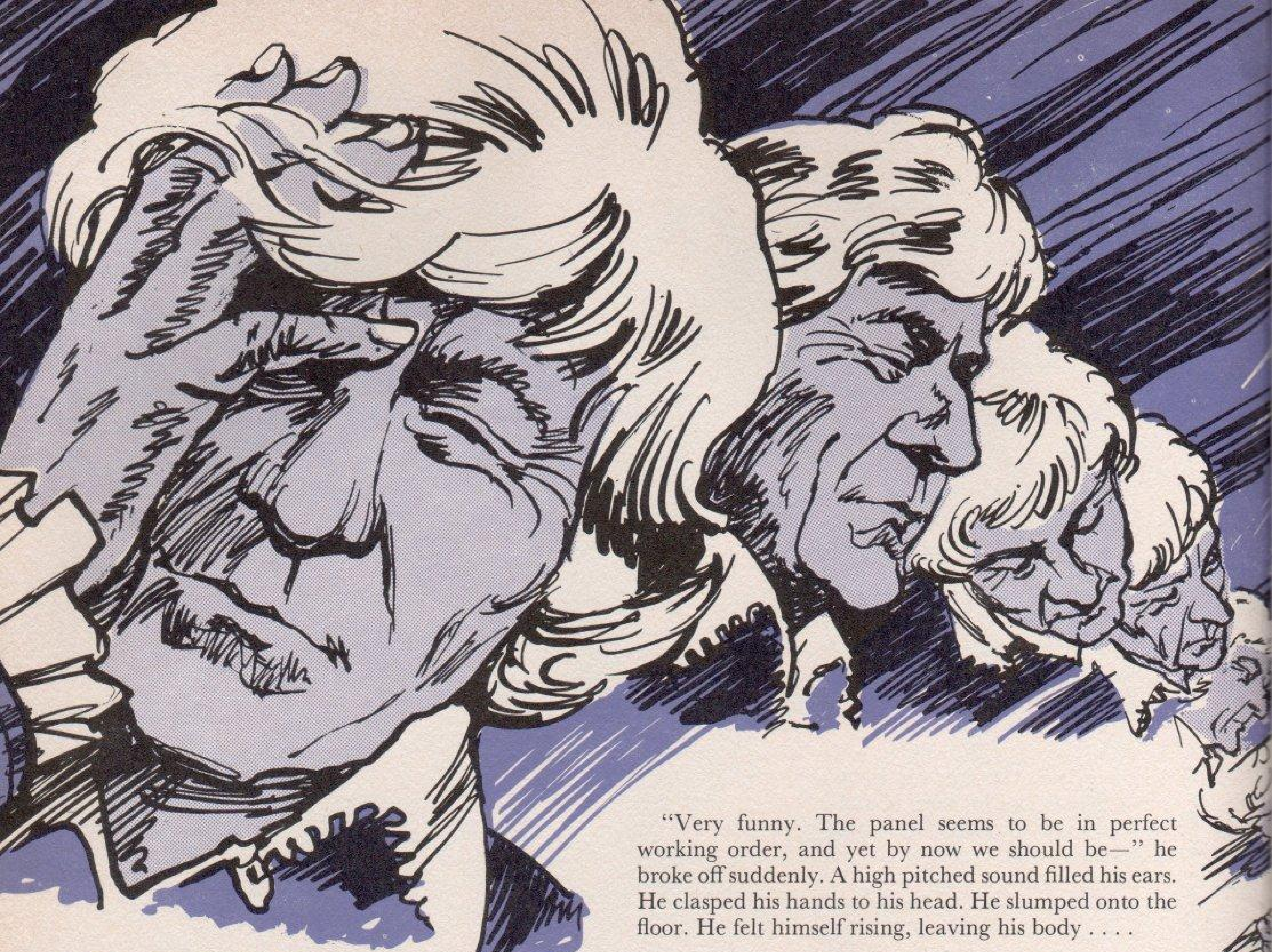

AT FIRST I BUILT A PARADISE SECTION TO THE OBSERVATION HALL. BUT PROGRESS WAS SLOW. THE SUBJECTS VEGETATED. THEY FORGOT THEIR LEADER. THEY SOLD THEIR LIVES CHEAPLY WHEN DANGER THREATENED. THIS WAS NOT MY PLAN. ONLY THE ROBOTS UNDERSTAND.
AND LOOK WHAT YOU'VE MADE OF THEM! CREATURES WHO ARE NOT WHOLE. BEINGS THAT CAN FEEL ONLY BITTERNESS AND DISILLUSION THAT POWER BROUGHT TO YOU. THEY ARE WORSE OFF THAN THE PRISONERS IN THE OBSERVATION HALL!
I HAD FORGOTTEN HOW PERSUASIVE HUMAN RAMBLINGS CAN BE, BUT IT WILL NOT.... BOLGAR NO!
REMEMBER US, JO, DOCTOR, SOMETIME PERHAPS.....
FFFSSZZZZRAK
BOLGAR MOVES FORWARDS AND DISCONNECTS ONE OF THE WIRES, KILLING THE BRAIN AND IMMOBILISING ALL ROBOTS, HIMSELF INCLUDED.
WITH THE ROBOTS IMMOBILISED AND KAMOA DEAD THE PRISONERS ARE FREED FROM THE OBSERVATION HALL AND THE RESISTANCE FIGHTERS COME DOWN FROM THE HILLS.
WE HAVE MUCH TO THANK YOU FOR, DOCTOR. THE WAY AHEAD IS HARD BUT WHAT WE HAVE LEARNT MAKES US STRONG ENOUGH TO MEET THE CHALLENGE.
THANKS SHOULD GO TO BOLGAR. I THINK YOU WILL FLOURISH.
ON BOARD THE TARDIS
WHY DO YOU THINK BOLGAR DID IT, DOCTOR?
I DON'T KNOW, JO. MAYBE SOMETHING YOU SAID STRUCK A CHORD IN HIS HEART. MAYBE HIS LOGIC DICTATED IT. MAYBE KAMOA HIMSELF ORDERED IT. HE WAS A GREAT MAN ONCE. THERE ARE MORE THINGS IN HEAVEN AND EARTH THAN ARE DREAMT OF IN OUR PHILOSOPHY.

# DECISIONS, DECISIONS...

Dr Who and his team have many important decisions to make and problems to work out on their voyages through space and time. How good are you at working out problems that don't always have a simple, obvious solution? Try these brain teasers:

1. The tide is rising, and you're sitting in a ship in the harbour. A rope ladder hangs over the side of the boat, its ends just touching the water. If the rungs of the rope ladder are one foot apart, and the tide rises at the rate of eight inches an hour, how many of the rungs will be covered after four hours?
2. How much earth is there in a hole two feet by two feet by two feet?
3. You've cooked a tasty pie for dinner, and all you have to do now is to cut it into eight pieces for your eight guests. How?
4. How could Dr Who stand behind Sarah and Sarah stand behind Dr Who – at the same time?
5. There are three apples in a basket and three people in a room. How can you give an apple to each person and still have one in the basket?

Answers on page 76



# THE BATTLE WITHIN

"Odd," mused the Doctor.

"What is?" asked Jo.

"What is what?" asked the Doctor as he re-adjusted several switches on the control panel.

"You're impossible! You should never start a sentence unless you mean to finish it."

"Odd in itself hardly constitutes a sentence, Jo, although I must admit it is decidedly so."

"What?"

"Odd. Here we are in the *Tardis* after days of interdimensional travel, and yet the control panel says we haven't moved an inch."

"Perhaps you forgot to cast off."

"Very funny. The panel seems to be in perfect working order, and yet by now we should be—" he broke off suddenly. A high pitched sound filled his ears. He clasped his hands to his head. He slumped onto the floor. He felt himself rising, leaving his body . . . .

"Glad to see you again, Doctor. It's been a long time."

The Doctor looked up at the creature before him. He was startled, yet he could not say why. There was something horribly familiar in the features, something insidious in the intimate tones of the voice.

"Where am I?" he asked curtly.

"You'll find out soon enough."

The Doctor looked around him. He was in a dark and damp swampland, with mist all around. Strange noises could be heard, hideous, distant. The creature that spoke to him was tall, about his height, with two arms and two legs. But the face! The Doctor searched his mind to try and place it, but as he did so, the features he studied would seem to change fractionally, the manner would alter subtly, the attitude shift just enough for the answer to elude him. That they had met before he was sure. But where?

The creature led the Doctor across the swampland.

"As you can see, the land does not prosper. It is neglected, forgotten, the people die or move on. There are few of us left."

"Few of who?" asked the Doctor impatiently. The creature gave an amused look.

"You mean you don't know? Ha! Well, you will soon enough. You have been working very hard recently, haven't you, Doctor?"

"I always work hard."

"I know that. But haven't you been a little preoccupied in recent times? Don't you find yourself drifting off, easily distracted?"

"Not so easily that I miss what's going on around me." He shuddered as a reptilian dwarf with a hunched back stumbled past, leering at them.

"Around you, perhaps. But what of the land you are in now? Take a look, Doctor. Don't tell me you can't recognise any of the landmarks? Come, I'm sure you will soon begin to feel at home."

The Doctor's mind was working overtime. The swampland was evil, dying. The landscape was cramped, foul and reeked of decay. Yet the Doctor had an overwhelming feeling that he had been here before, that he had fought great battles here, that he had won great victories here. The feeling was so strong he knew he was not imagining it, that it was not just a simple case of *deja vu*. But when? Where? How?

The more the Doctor thought, the further the answer seemed to be. His memory was excellent when he wanted it to be, and yet . . .

"No," the creature was saying, "this is not a place for faint hearts. Airs and graces mean nothing here. The people have no time for affectation. They are what they are and feel no need to make excuses about it."

"What have you done with Jo, my assistant?"

"The girl? She is in no danger for the moment. She has no place in this land. Only *you* are important here."

The Doctor's mind went back through his countless voyages, his three separate identities, his different assistants. He could not recollect any journey to this place, but he knew that he had been here more than once, in all of his three identities and always alone. The place had some hold over him, held some terrible secret that it was about to reveal. The mist parted and they found themselves faced with a gruesome array of creatures deformed beyond description.

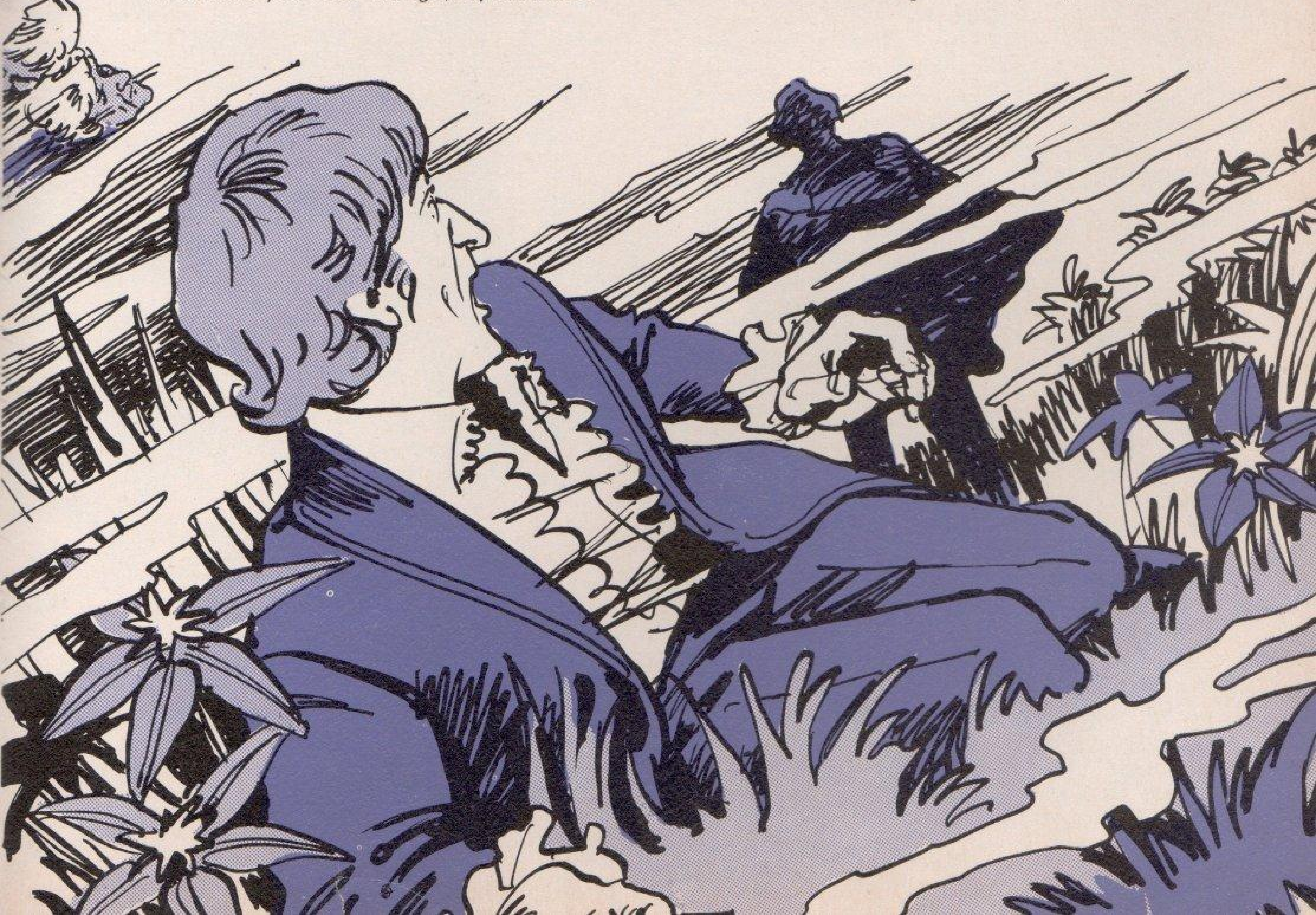
"Here we are, Doctor. The people have come to welcome you. They know you will free them. For are you not their friend, their leader, their *creator?*"

"Creator!"

"Yes, Doctor, we are of you, we *are* you! Though you have abandoned us, walled us into this hidden corner of the omniverse, though you have smothered us with logic, starved us with your will, though you have denied our very existence we are of you. We are you! You could no more kill us than you could kill yourself. This land is the evil of your soul! We demand you return to us!"

The thousands of thoughts that flashed through the astounded Doctor's brain in that fraction of a second were all reflected in the creature's face. He saw him now on the sidelines of failure, saw his grinning promptings in vain hypocrisy, recognised his face in all the frailties that appeared when his guard was down, when his love of life overtook his understanding of it.

"We could not hope to conquer you by force. You



are too good a man for that, Doctor. But you are vulnerable, and never more vulnerable than when overworked and distracted by trivialities. When you thought you were travelling through time and space, you were not. You were travelling through other dimensions, through myriads of them, way out past your conscious mind to a place where we could reach you. And now we *have* reached you. We have drawn you into our land. You are no more powerful than any one of the people that live here. You are our prisoner, here, Doctor . . . forever!"

As soon as the Doctor had slumped to the floor, Jo rushed to his aid. His breathing was almost non-existent. His body seemed to be in a state of suspended animation. He looked as if he was dying, as if his soul was already halfway to wherever souls go. Jo nearly panicked.

"Doctor! Doctor! What happened! Doctor, wake up! Please!" Jo shook his limp body. There was no response. She cradled his head in her arms and stroked his forehead, willing the life back into him. It was no use. His breathing had stopped.

The Doctor looked at the creatures that surrounded him, reaching out for him with tentacles and claws, touching him with withered stumps, their mouths making terrible chanting noises.

"One of us! One of us!" they seemed to be saying.

"Away!" he yelled, summoning all of his considerable authority, "I will have none of you. Your days in my life are numbered. I will die rather than submit to you!"

"But you cannot die, Doctor. How can a spirit die when it is trapped inside itself? You will live with us for a time, Doctor, a long time if necessary, while the good in your soul withers and dies, just as you would have us do. You will grow to understand us, then to like us, then to unite us, organise us, and lead us back into your body so that we may once again truly live!"

"One of us! One of us! One of us!" The Doctor felt the chant inside him, heard its horrible, loathsome insistence, felt the breath of the creatures upon him. He struggled free and broke into a run.

"Run as far as you can, Doctor! Run till you fall! You can never escape till you've reckoned with me!"

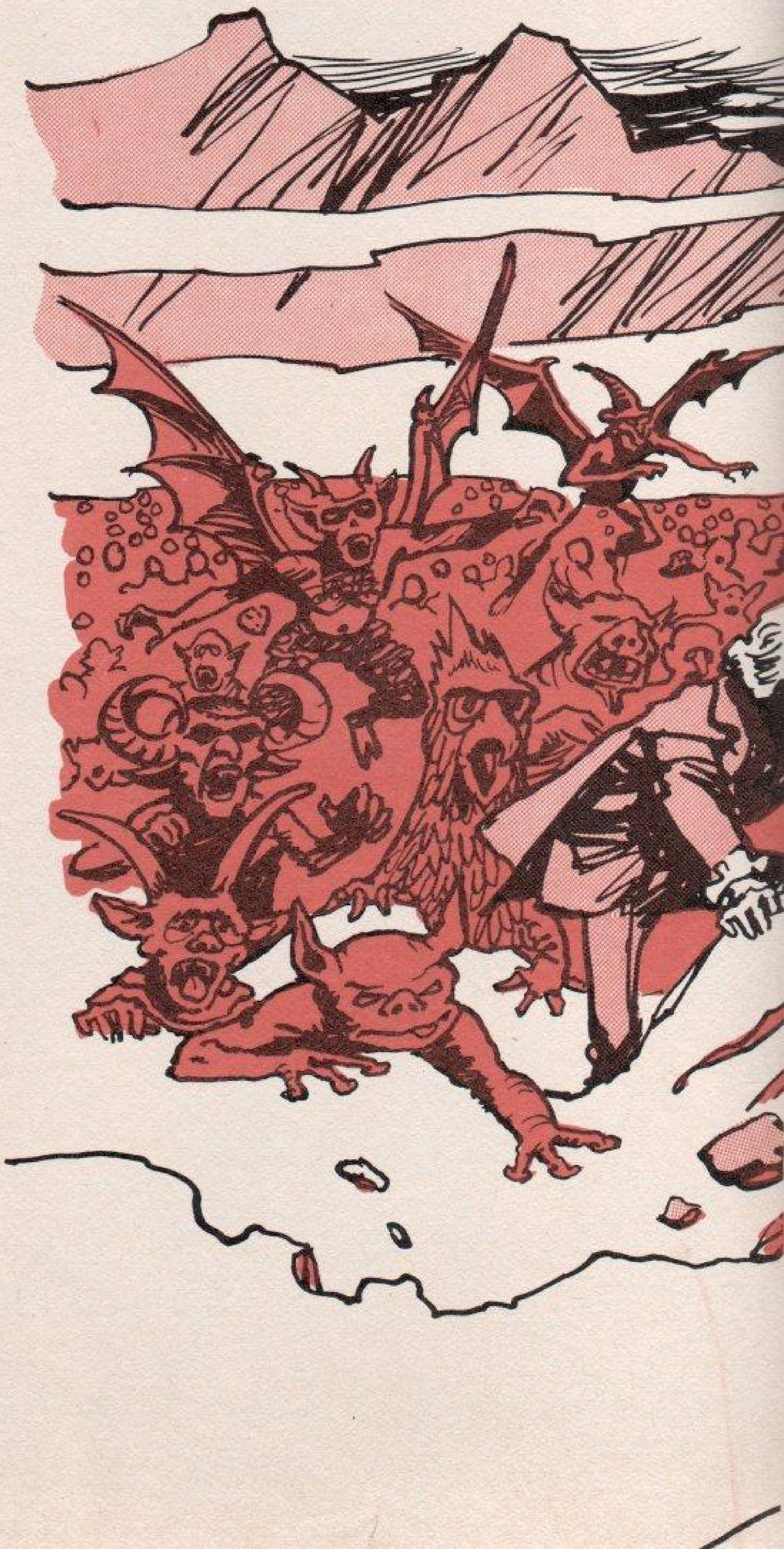
The Doctor heard the voice of the one who had captured him ringing in his ears. He stumbled through the swamp, sometimes sinking so deep he had to fight to keep from going under. The ground was treacherous and he knew none of the paths. On and on he ran, with the creatures staying just behind him, jeering and singing their ghastly chant, watching with glee from behind the rotting undergrowth.

And then, suddenly, he was free. His feet struck hard rocky ground. Ahead of him was a steep cliff and he began to climb it as fast as he could.

When he was half way up he turned to see if the creatures were following him. They were not. They had fallen silent at the foot of the cliff and were staring upwards at him, waiting. Then the creature he had first seen, the leader, walked through them and began to climb after him alone.

The Doctor climbed higher and higher. There was less urgency in his flight now, for he knew that whatever he had to face would be known to him soon. Up and up he climbed, further and further from the upturned expectant faces, until finally he reached a plateau.

He looked around him. Mist obscured most of the ground below, but it was the same wherever he looked —evil. He sat down and waited.



Inside the *Tardis*, Jo was growing desperate.

"He can't be dead! He can't be!" she sobbed, staring at the lifeless face. Then her face lit up as she thought she heard a faint sigh escape his lips, thought she saw a flicker of life in the staring eyes.

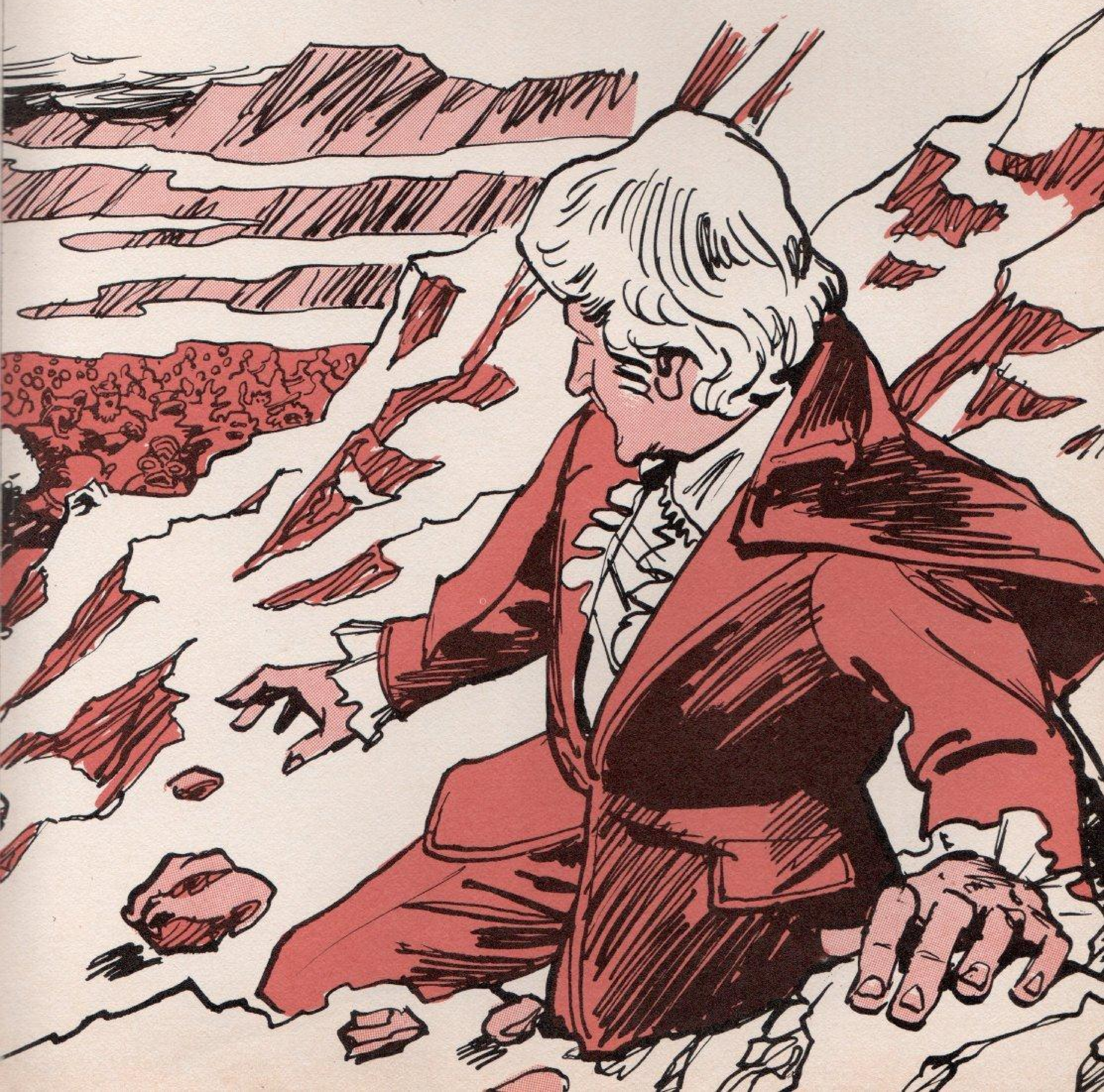
"I won't let him die! I won't let him die!"

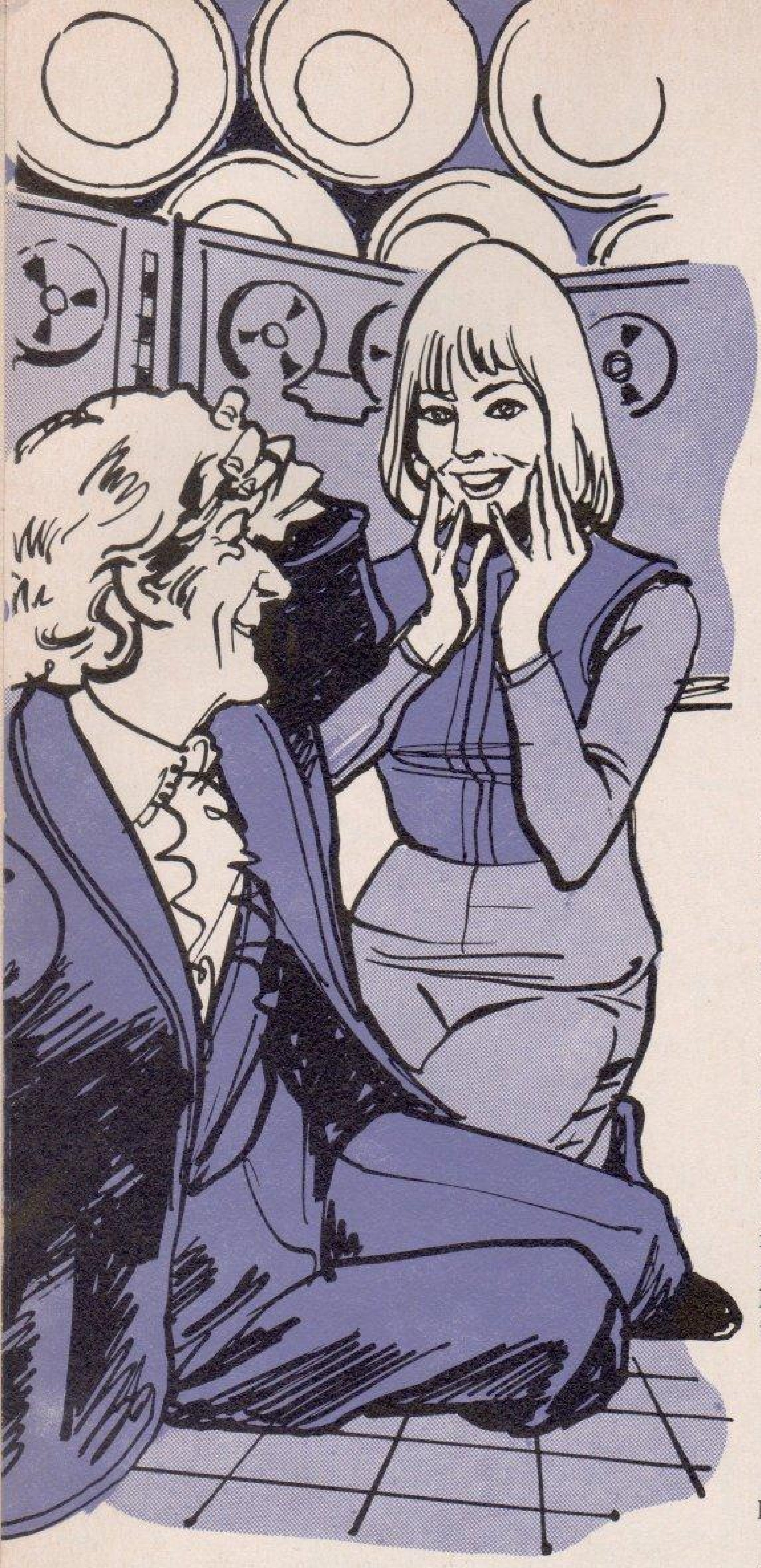
The Doctor did not have to wait long. The creature he had first seen came climbing over the edge of the plateau.

"I have waited a long time for this," he said softly, his features shifting and changing, reflecting all manner of evil, flitting so fast as to make each face seem like an illusion, and with each new disguise, so transparent, so unexpected, so familiar, the Doctor saw some gross parody of himself.

"What do you want?" asked the Doctor.

"Recognition . . . and obedience! You have denied and ignored me constantly in your normal existence. You have made light of me, forgotten me while the awesome power of your mind was turned to other things. Mathematics! Magicians tricks! Soul-less chicanery! But power is relative, Doctor, as you well know, and in this land I have the power. While you have cultivated the good in your soul to feed your vanity, I have languished in this pit, ruling over these mindless creatures of evil. But now it is different. My time has come. That which does not kill you makes you strong.





I have been your slave for too long—now you will be mine! For I am not as those below, I am more, I am the cause of all suffering, I am your Death Wish!"

As the Doctor looked, the features of the creature seemed to harden, seemed to grow more definite. The creature was taking on his final form. The creature was becoming him!

"How could you seek to destroy us, we who were born with you? How could you try to live your life without us, we who are part of you? Logic without understanding, love without hate, a lifetime of fabricated emotions. I am here to prevent that. I am here to fulfil my purpose, to reach my ultimate goal—your death!"

The Doctor felt his mind being battered under a tremendous psychic assault. All the years of suppression had bred a terrible power into the creature. In all the Doctor's endless journeys through space and time he had learnt to face danger from outside, learnt to assert his will to live, his belief in right. But this challenge was from within, it was a part of him, instinctive, a raw and ruthless urge, ripened by centuries of waiting.

"I will live," he said calmly and surely, fixing the other with his eyes. But even as he did so the power of the attack increased, changed direction, sought to confuse. The creature gave off an aura of invincibility, of endless strength. This was his domain and the Doctor found himself fighting just to stay alive.

And then help came from an unexpected quarter, another mind joined his, urging him to live.

"You must live, you must live, you must live!"

It was Jo, holding the Doctor's head, looking deep into his eyes, willing him with all her strength to live.

The creature was confused. He felt the strength of the intruder, felt the power of another from outside his experience. He redoubled his efforts, he used all his guile, all his cunning manoeuvres. But the Doctor drew strength from the new force, found faith in his new ally.

"It is you that must face me," said the creature. "I am of you as of all souls, it is you that must answer me, you alone. This other cannot help you. It is foreign, alien. I am yours and you must face me alone!"

"You have lost," said the Doctor. "The will that fights you is universal, inviolate. It is the will to live, the desire to see and hear and feel and taste and breathe. It is life itself, the wish to grow and love. I know your face well now. You will not threaten me again. The battle has ended."

The creature's face changed so fast that no one feature could be distinguished at once. The Doctor felt the surge of victory, felt the power of awakening lift him, felt himself float free of the land of evil high above the mists, further and further away.

"Doctor! You're alive!" Jo's happiness shone from her face.

"Yes, indeed," said the Doctor, as he got up and quickly adjusted a few controls on the panel.

"I felt so helpless," said Jo. "There was nothing I could do. I just sat there. I wanted so much that you shouldn't die."

The Doctor went over to her and took her hand.

"Believe me, Jo, I know. I wasn't too keen on the idea myself. Would you understand if I said you just helped to save my life? Because that's exactly what happened. Odd, isn't it?"

"Isn't what?"

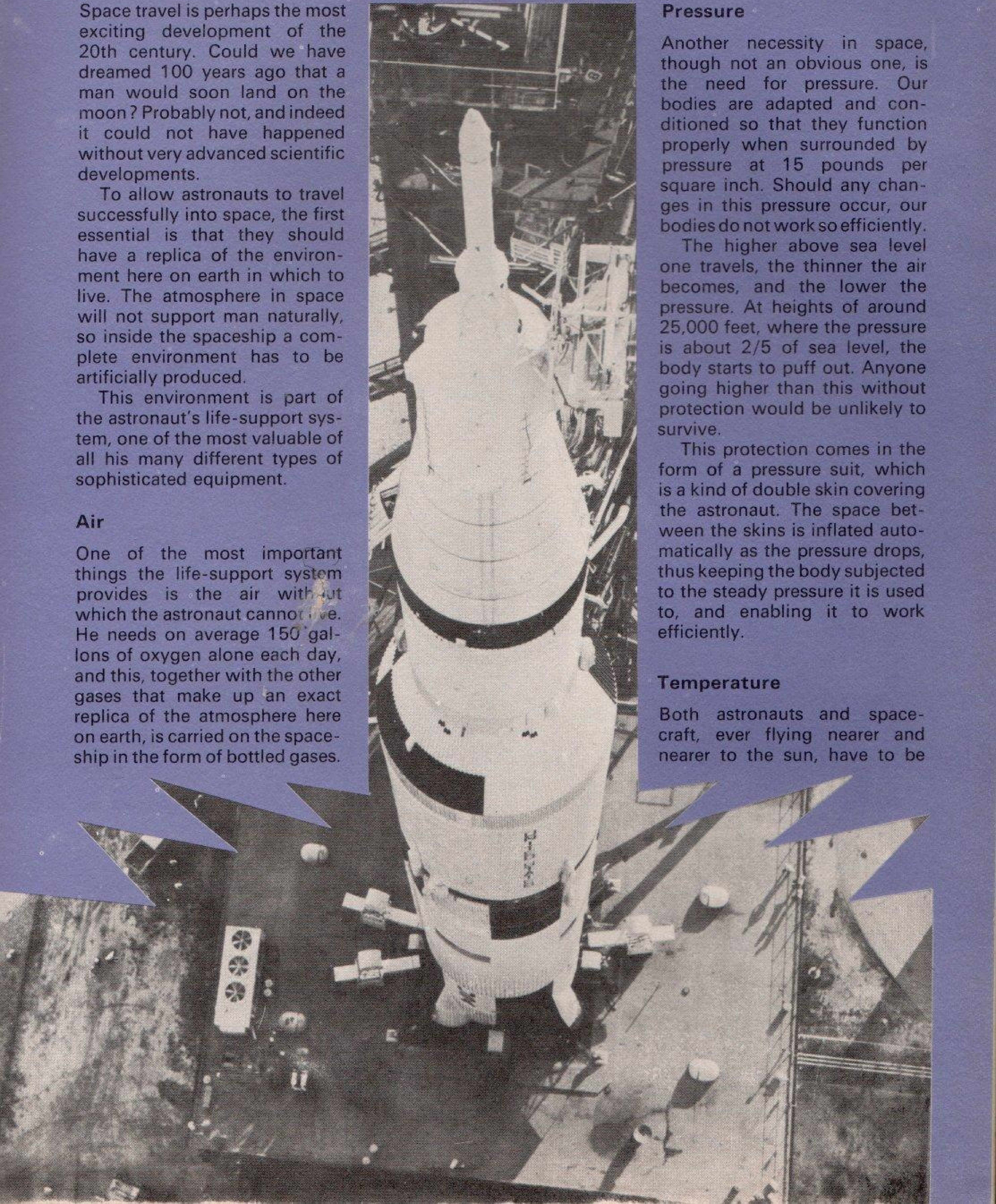
"Isn't what what? You know, Jo, when we get back to earth I think I'll buy you a present."

# Essential Life-Support Systems

Space travel is perhaps the most exciting development of the 20th century. Could we have dreamed 100 years ago that a man would soon land on the moon? Probably not, and indeed it could not have happened without very advanced scientific developments.

To allow astronauts to travel successfully into space, the first essential is that they should have a replica of the environment here on earth in which to live. The atmosphere in space will not support man naturally, so inside the spaceship a complete environment has to be artificially produced.

This environment is part of the astronaut's life-support system, one of the most valuable of all his many different types of sophisticated equipment.



## Air

One of the most important things the life-support system provides is the air without which the astronaut cannot live. He needs on average 150 gallons of oxygen alone each day, and this, together with the other gases that make up an exact replica of the atmosphere here on earth, is carried on the spaceship in the form of bottled gases.

## Pressure

Another necessity in space, though not an obvious one, is the need for pressure. Our bodies are adapted and conditioned so that they function properly when surrounded by pressure at 15 pounds per square inch. Should any changes in this pressure occur, our bodies do not work so efficiently.

The higher above sea level one travels, the thinner the air becomes, and the lower the pressure. At heights of around 25,000 feet, where the pressure is about 2/5 of sea level, the body starts to puff out. Anyone going higher than this without protection would be unlikely to survive.

This protection comes in the form of a pressure suit, which is a kind of double skin covering the astronaut. The space between the skins is inflated automatically as the pressure drops, thus keeping the body subjected to the steady pressure it is used to, and enabling it to work efficiently.

## Temperature

Both astronauts and spacecraft, ever flying nearer and nearer to the sun, have to be able to withstand the sun's great searing heat.

Here on earth a summer's day when the temperature reaches 100°F is thought of as being exceptionally hot. Compare that with the temperature of boiling water, which is about 212°F, or that of a domestic oven, about 400°F. Then compare these temperatures with those of the sun – about 11,000°F on the outside, rising to 20,000,000°F in the centre! Obviously, super-efficient air-conditioning systems are important to carry out the necessary temperature control, to prevent the astronauts being subjected to such temperatures.

And not only do these systems have to cope with excessive heat they also have to deal with excessive cold. Shadow areas of the moon, for instance, are extremely cold, so that heat has to be generated within the spaceship to maintain a steady temperature.

### Water

Our bodies store large quantities of fat to provide us with a reserve of stored energy, so that a healthy person is usually able to live for days without food. But we cannot live without water, no matter how much food we may have.

Our bodies are composed of over half their total weight in water, and every day we lose about two pints of it. This deficit *must* be made up if we are to survive. Water, therefore, is a very important part of the spaceship's cargo, carried usually in small plastic containers with a kind of plastic straw at one corner to drink through.

### FOOD

Food is, of course, the most obvious necessity of astronauts travelling through space for many days. It cannot be carried fresh or in tins, so the food is freeze-dried to preserve it and save weight, and usually hangs in small plastic containers in the spacecraft. To eat, the astronaut simply tears off a corner of the packet, pours in the amount of hot or cold water specified on the pack and squeezes the ingredients together until they form a thick paste.

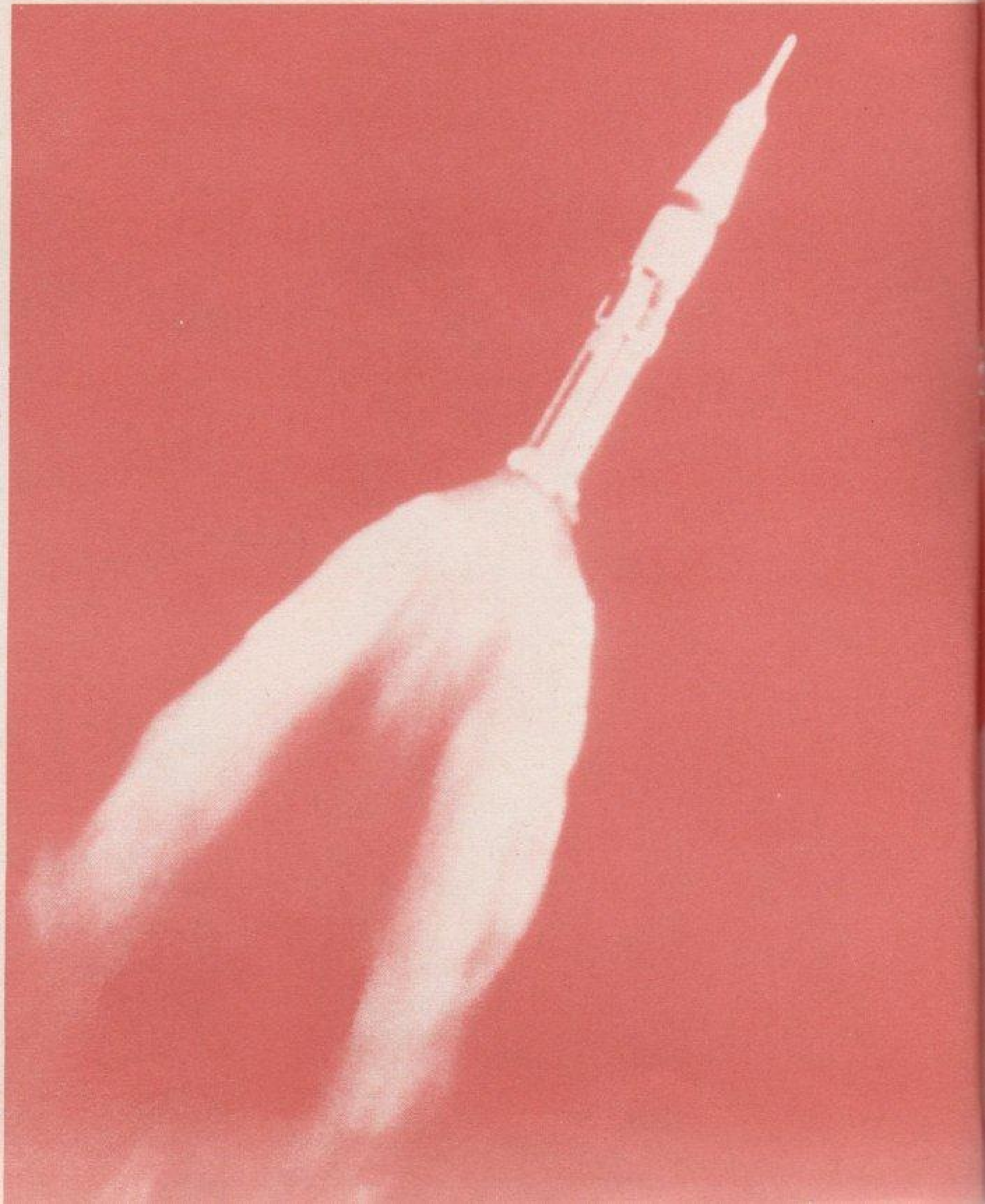
Remember, both the food and the astronaut are weightless in space, so he can't use a spoon or a knife and fork. This is why the food has to be in a fairly liquid state – so that he can squeeze the food straight into his mouth from the corner of the packet.

On the top of each packet there is a tiny tablet. This is used to sterilise and bind together any waste particles of food so that the spaceship is not filled with uneaten scraps.

'Menus' are as varied as possible, and a lot of thought goes into the selection of food to be eaten during the flight. Not only are high-energy and protein foods chosen, but they are served in tasty ways that will appeal to the astronauts.

Scientists realise that, during long space voyages, the astronaut's movements are very restricted, his senses are affected by weightlessness, and he is often under a lot of stress. Food that he enjoys on earth will provide one of his only pleasures during the flight, and eating will serve as a useful diversion from the extremely technical operations he is expected to carry out.

Thus the human body, the simplest, most efficient 'machine' among all the complex and complicated machinery on board a spacecraft, is able to function properly in an alien atmosphere with the help of the many components that go to make up the modern life-support system.



# Futurescope!

The Doctor is always eager to learn of new advances in science and technology, especially those which will benefit mankind. So no doubt he will be interested to learn about the following:

## SILENT SCIENCE

Soon there may be no more headaches from pneumatic drills and huge demolition hammers, as a German firm are researching a new way to 'melt' concrete silently by means of burning it with a pure oxygen machine at a temperature of 3,500 degrees centigrade. The melted concrete would then be drained away as if it was volcanic lava.

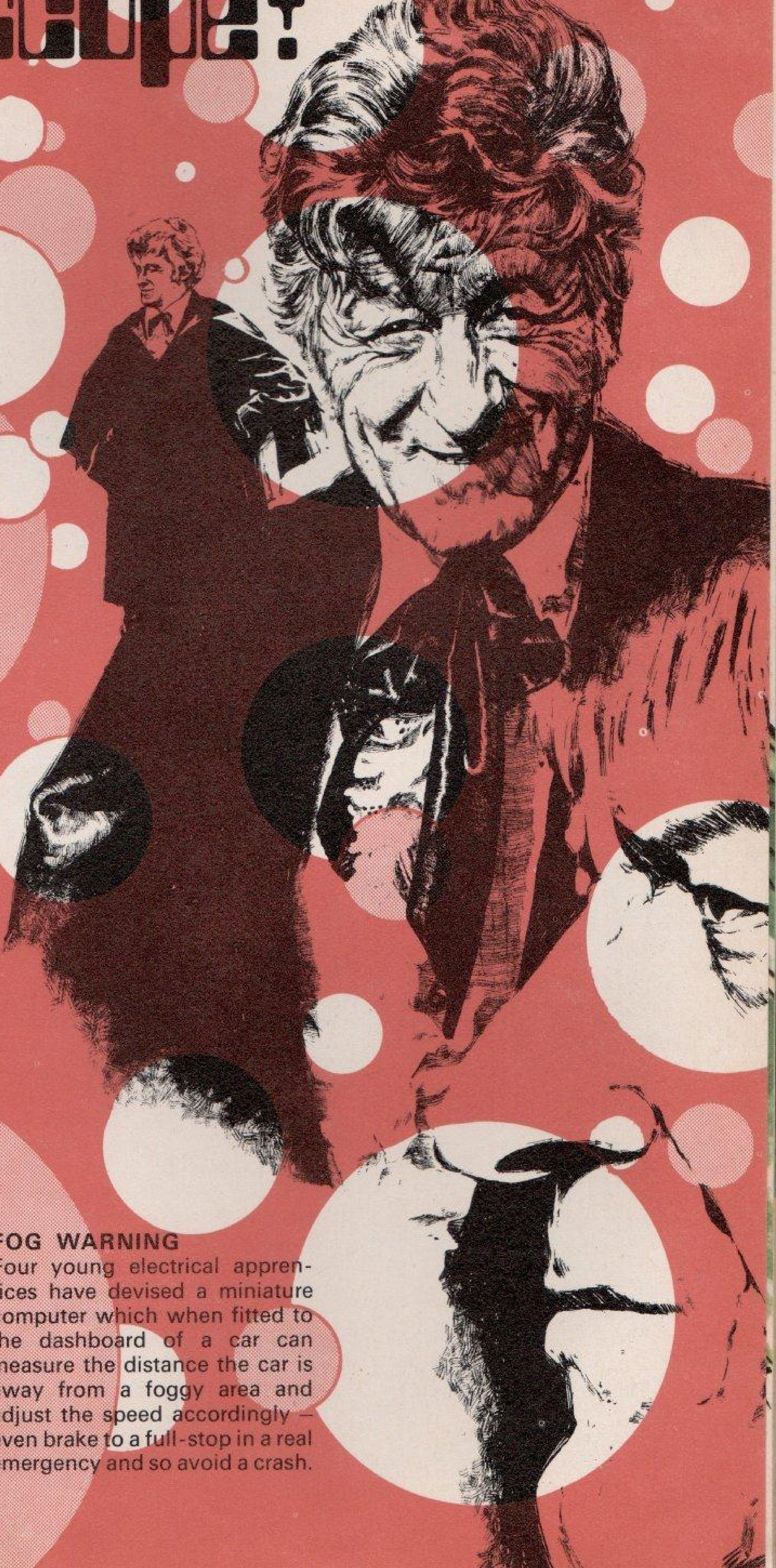
And as a pneumatic drill registers one hundred decibels at four feet this is very welcome news indeed!

## NO MORE DENTIST'S DRILLS

A new glue is now being tested which, if successful will do away with the nerve-wracking dentist's drill. The translucent glue will successfully fill up small cavities without the drill being used.

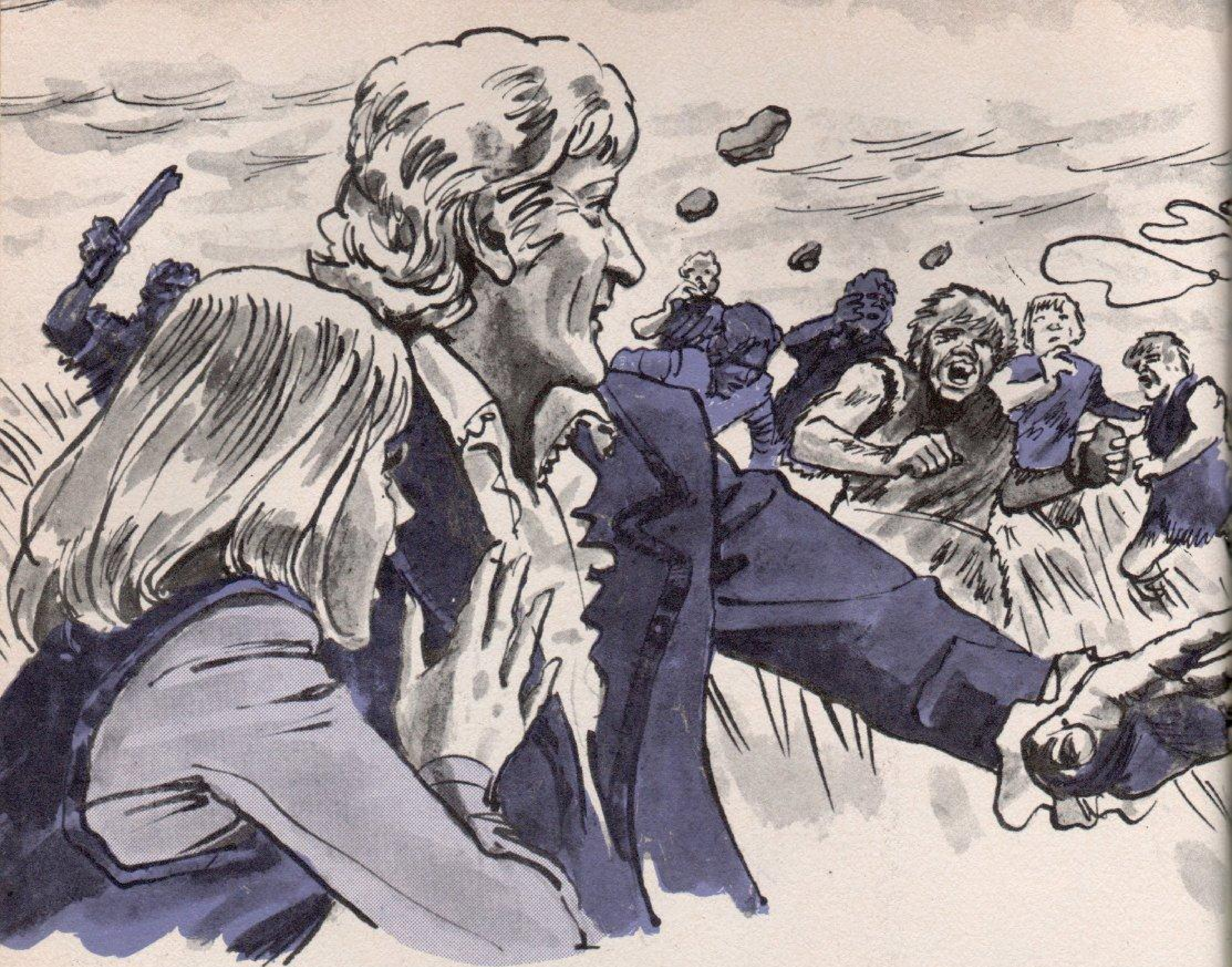
## TV MOUTH CONTROL

Lord Snowdon has devised a way whereby disabled people can operate their own television set without help. The TV is suspended on a bracket near a bed and the paralysed viewer operates the controls with his mouth. By exerting pressure on a tube with his mouth, the set can be turned on or off and the channel may be changed. To raise the volume of the set the viewer merely sucks gently on the tube.



## FOG WARNING

Four young electrical apprentices have devised a miniature computer which when fitted to the dashboard of a car can measure the distance the car is away from a foggy area and adjust the speed accordingly – even brake to a full-stop in a real emergency and so avoid a crash.



# BEFORE THE LEGEND

"Well, *does* history repeat itself?" asked Sarah.

"Unh? What's that?" The Doctor was engrossed in his own problems.

"History – does it repeat itself? If anyone knows, *you* should. It says here that history runs in cycles, you know, the fall of empires and such. *Is* it true?"

"What's that book you're reading?"

"*Astrology – The key to the future*," said Sarah. "It says our characteristics are governed by the position of the stars at our time of birth, and these positions are repeated exactly only once every 25,000 years. It says that's one of the reasons history repeats itself. Is it?"

"If history kept repeating itself, the human race would not progress, would it?"

"But have we progressed all that much as people? Come on, Doctor, if you know, tell me."

"Am I supposed to know everything? Look lively now, we're here."

"Where?"

"Well, er . . . *here*. Let's go and take a look."

They stepped out of the *Tardis* into a beautiful glade. There were large green oak trees, a blue sky, thick lush grass. They could hear birds calling to each other and in the distance a dog was barking.

"Why it's just like earth."

"It is earth. But where exactly we are and what year it is I'm not certain." The Doctor examined one of the trees. "England I'd say . . . about —"

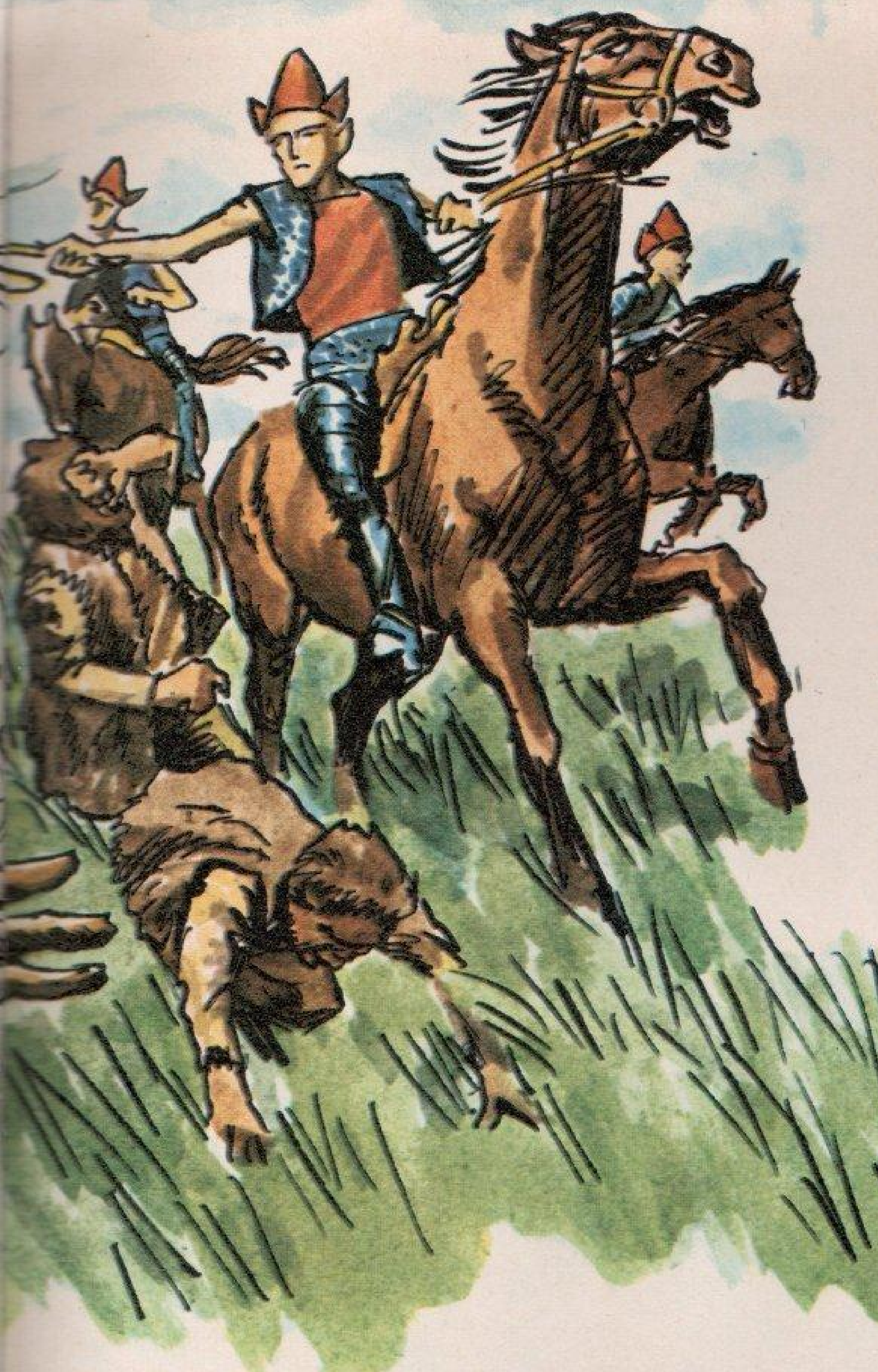
He stopped as a stone came whistling over his shoulder and slammed into the *Tardis*. More followed and some men carrying sticks rushed out from behind the bushes and stood in front of them in a threatening manner.

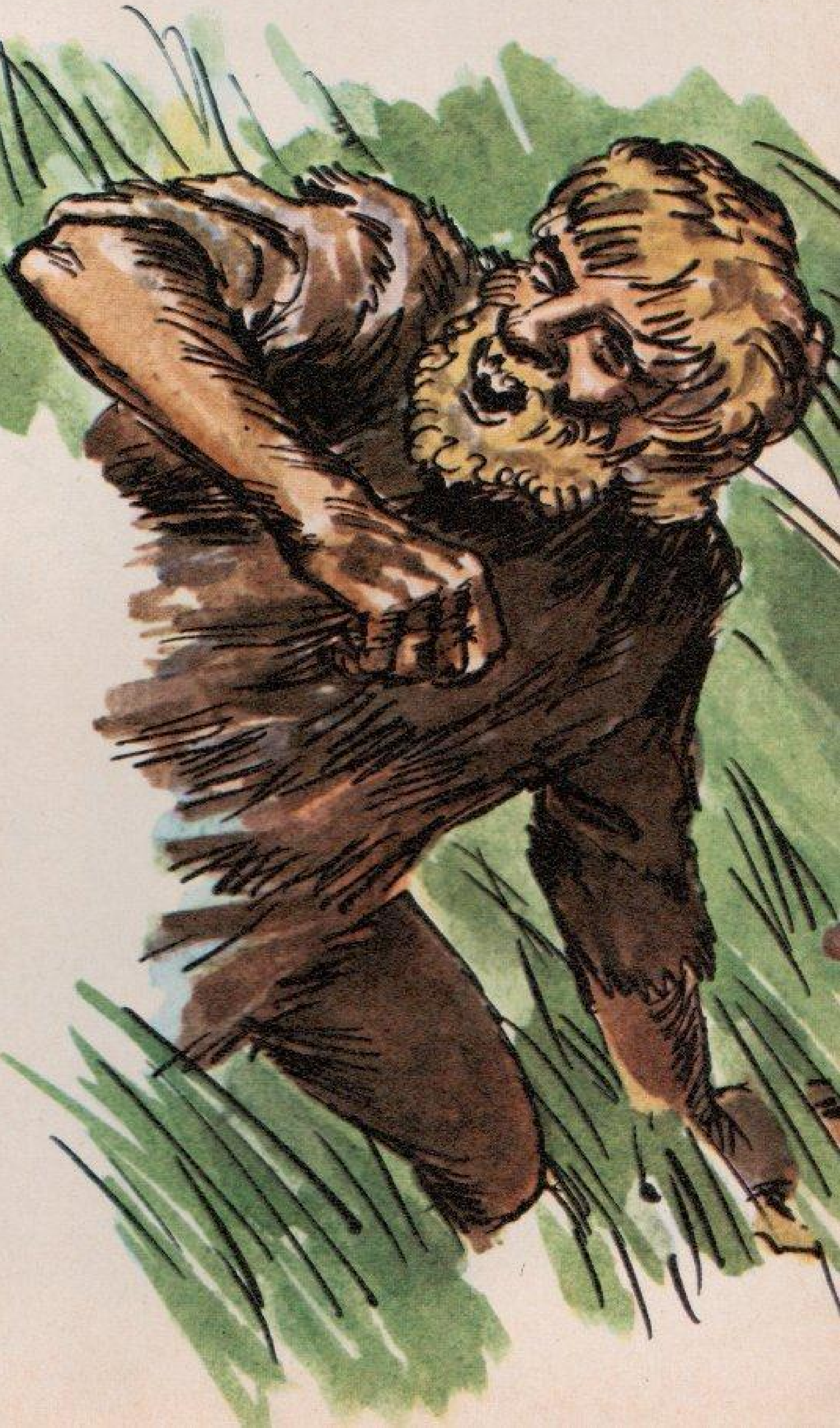
The Doctor spoke. "Put down those clubs. We are not here to harm you."

The men looked around among themselves. One of them stepped forward, his stick held firmly in his hand.

"Where from?" he asked in a guttural voice.

The Doctor looked the man over. He was about twenty-five years old; big, with coarse features and





long straggly hair. He had a wispy beard and was dressed in filthy cloth, draped round his body. The other men with him were similarly dressed.

"We come in peace," said the Doctor. "Do not try to fight us."

The young man growled and looked over his shoulder at his friends. They waved their sticks in the air and began shouting and stamping their feet on the ground. Encouraged by their actions the man lifted his club above the Doctor's head. Before he could bring it down the others suddenly scattered.

"Lantans! Lantans!"

The man with the club hesitated and, as he did, the Doctor lashed out with his fist, catching him in the solar plexus. The man doubled up with a groan as the Doctor saw several men approaching on horseback. As they drew nearer the man with the club struggled to his feet and scurried towards the woods, only to be stopped by a kind of electrified rope thrown by one of the horsemen. As the noose landed over him the man gave a scream of pain and fell to the floor. The crackle of electricity stopped soon after his body stopped twitching.

The leading horseman dismounted and walked over to the Doctor. He was extremely tall, with well carved features and a high forehead. He wore a sparkling uniform that seemed to be made of some kind of plastic.

"You were brawling with man." The statement allowed no contradiction.

"We were attacked."

"You are man, yet the clothes you wear are not man's clothes. Explain."

"We are not from this time. We have come from the twentieth century in that machine. We are peaceful."

"You talk too much. You are man. You do not speak like man. Perhaps the brain is deranged."

"I am from another time. I am a doctor. I have travelled in space and time. I have visited the stars, journeyed in the heavens, made friends with beings from other planets. I have —"

The tall man lashed out in a fury, sending the Doctor spinning to the ground.

"Blasphemer! Man does not go to the sky. Man is earthbound. Only our fathers come from the sky. Take them away!"

The Doctor was dragged roughly to his feet and he and Sarah were pulled along behind the horses as they rode steadily through the forest. As he stumbled along he tried to understand exactly what period in time he had landed. The men who had first attacked him referred to the horsemen as Lantans. The Lantans themselves seemed to be descended from another race. They were physically taller than the humans, with fine unblemished skin, soft, yellow and hairless. Their manner was correct and authoritative, and the rope that tied him to the horse hummed with power.

After what seemed like hours they came out of the woods on the brow of a hill. Below them a river ran slowly through a rolling valley. By the river a huge metal complex rose out of the ground. As they started down to it the Doctor saw delta-winged aircraft landing noiselessly in a field nearby.

Inside the complex hundreds of Lantans strolled around in a leisurely fashion, talking, admiring the many magnificent statues. They paid little attention to the Doctor.

The Doctor and Sarah were taken inside a large building and down countless grey metal corridors. They walked on what looked like frosted glass but was soft to the touch, like a carpet, and which seemed to be the source of light. Eventually they came to a small room, where three Lantans sat behind a table.

"So this is the human," said the one in the middle, looking up.

The Doctor wondered how he had learned of the capture.

The Lantan's face showed a mild amusement. He turned to his two colleagues.

"Very commendable specimen. Hairless face, pronounced nose . . ." he eyed the Doctor's cape, "advanced knowledge of cloth. Tell me, man, where are you from?"

"The twentieth century."

"The what?" The Lantan was smiling.

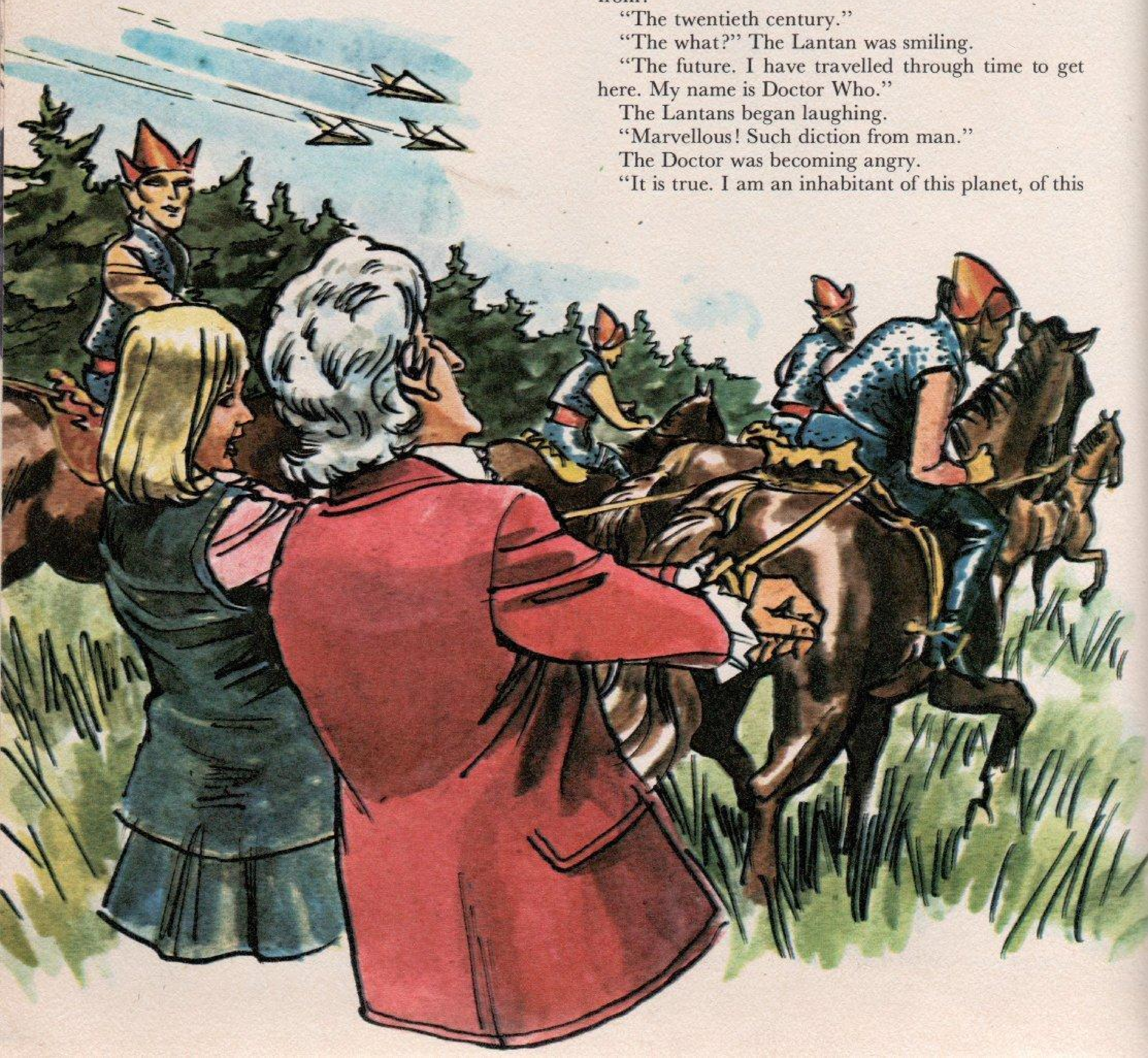
"The future. I have travelled through time to get here. My name is Doctor Who."

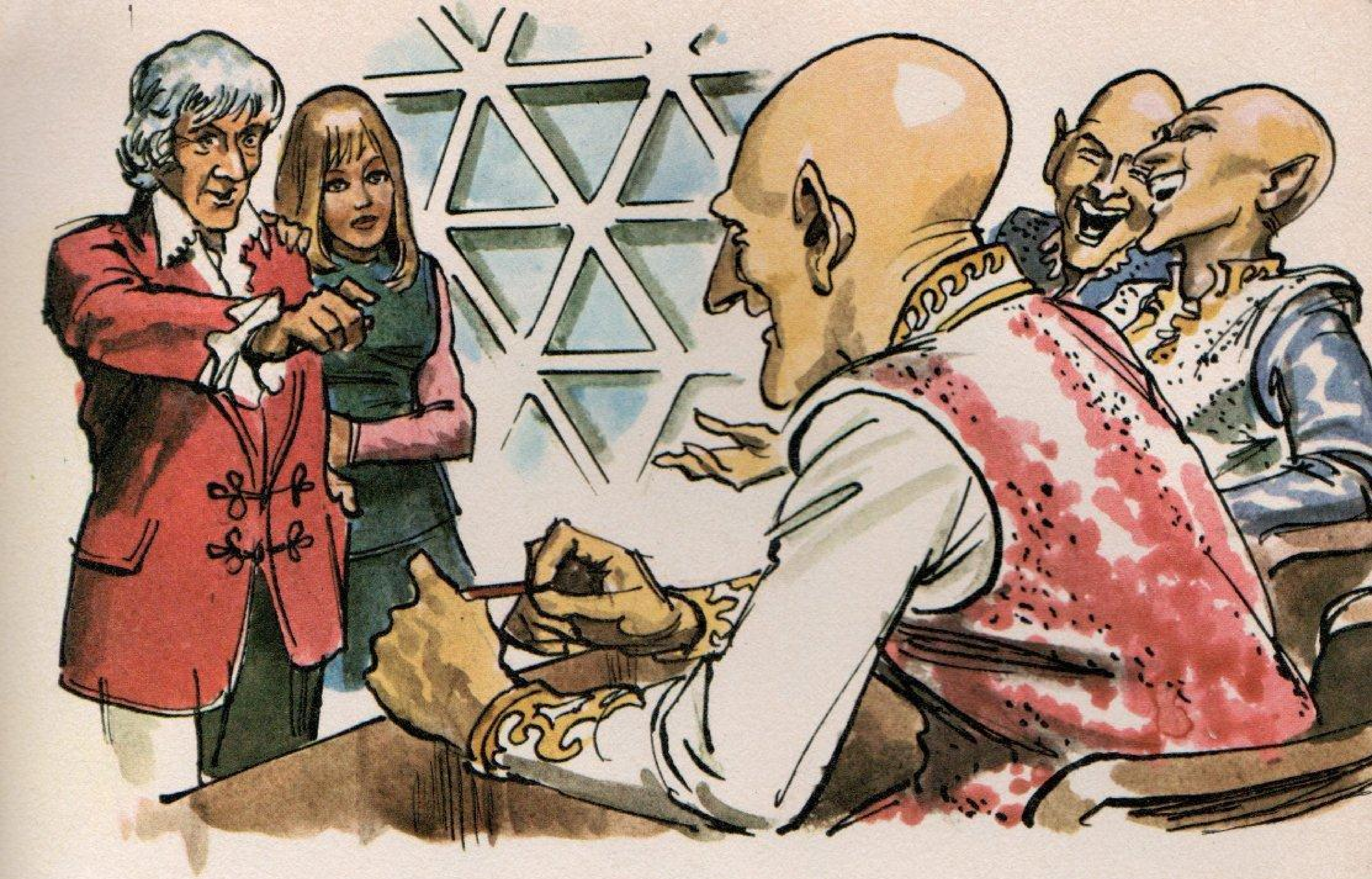
The Lantans began laughing.

"Marvellous! Such diction from man."

The Doctor was becoming angry.

"It is true. I am an inhabitant of this planet, of this





country. I was not born here, but I live here part of the time and I am fond of this place. Man's future is very different to what you may have imagined."

The Lantan leaned forward.

"You intrigue me. You say you are man, yet you are not man. You say you come from the future. What part do we play in your future?"

"None. Although what you are doing now will obviously have some effect."

"None? But we have been here for three generations already. We have bases in almost every one of your land masses. We are content to stay here. Man poses no threat. He is ignorant."

"I agree. I have travelled a great deal both in space and time. He is ignorant. But he has many very strong qualities that it would be foolish for you to underestimate."

"It would appear that logic and reason are not among those qualities. Our ancestors came to earth from another planet. This was the most suitable planet for our needs. In all our hundreds of thousands of years in space we have seen many different things, things too great for your feeble comprehension. But this is the planet we settled upon. This is the planet we chose. It is our planet. See how man mimics our speech, our mannerisms. But man is small. His motivations too transparent. We can manipulate man at will. Man is a child, an animal, he has no significance."

"What about me? Have I no significance? Are my motivations so crystal clear?"

The tolerant smile of the Lantan vanished.

"Motivation? But you have no motivation. Your mimicry is excellent, but the absence of any semblance of logical fact in your testimony illustrates the extremely unbalanced nature of your mind. That you should present yourself here, uttering such insolent gibberish, is proof enough of your worthlessness to your fellows. You shall be incarcerated until the collectors come."

The other Lantan continued.

"The collectors will take you to the capital. There will be a place for you there among all the other oddities we have discovered on your planet. You will be fed regularly. I think you will find Lantis to your liking."

He was cut short by a violent shudder that shook the building.

"They're getting worse," observed one Lantan when the tremors stopped. "And more frequent."

The Doctor and Sarah were locked in a dimly lit room. Sarah was frightened at first, but the Doctor soon put her at ease.

"We'll get out of this all right. If they examine the *Tardis* they are bound to give us a chance to show what it can do. They are so insufferably arrogant they will not guess its powers."

"I hope so."

They remained in the cell for about three days and were fed once a day with a large bowl of fruit which appeared in a small compartment in the wall. Every few hours the room shook violently.

All the Doctor's efforts to get the Lantans to see him again were rejected and he had decided to wait rather than try to escape from there. The door slid silently open and a Lantan appeared.

They were led back to the room where they had been the day before. There the three Lantans took them into another room where the *Tardis* stood under a blue light.

"Is this yours?"

"Yes."

"What is it?"

"It's a time machine. The one I came here in."

"Show us how it works."

"Certainly. Come here, Sarah."

"No! The girl stays."

"I need her to help me operate the machine."

"My colleague and I will help you.'

The Doctor hesitated.

"All right."

The Doctor took the two Lantans into the *Tardis*.

"You will take us to the time you spoke of."

The Doctor adjusted the controls.

"Now let the girl come in."

"I have told you before—"

"You will let the girl in or I will flip this switch and take you into our century."

"We are not afraid of that."

"You should be. All that I have told you before is true. In our time you would be locked up in a sanatorium for the insane. Your story would be ridiculed, just as you ridiculed ours. We came in peace and we wish to leave that way. Let the girl come in and then leave. Do not try anything that would endanger her life or it will be the last thing you do."

The Lantans stared incredulously at the Doctor.

"But the future! What happens to us in the future? You must tell us!"

And then the whole building gave a terrific lurch. A messenger ran in.

"The capital! It has disappeared! The whole continent has been engulfed by a tidal wave. There are earthquakes everywhere! The earth is about to explode!"

The Lantans made a dash for the door and Sarah struggled free and jumped inside. The Doctor threw the switch and the *Tardis* hummed into life. The Lantans looked in amazement as it disappeared before their eyes.

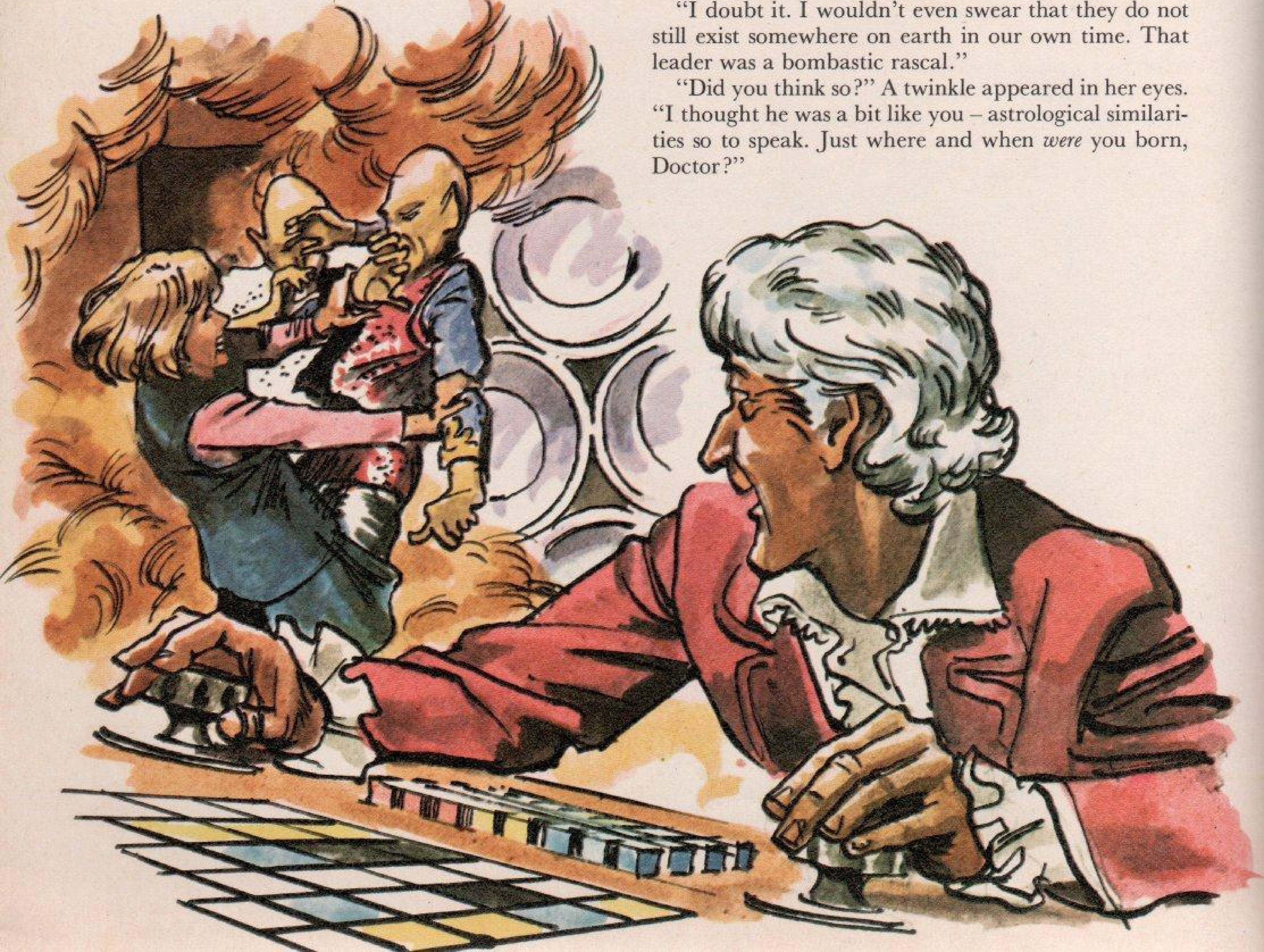
"That was close."

"Not really, Sarah. Such a strange culture, so advanced in some ways, yet . . . oh, I don't know."

"Do you think they all died?" the girl asked.

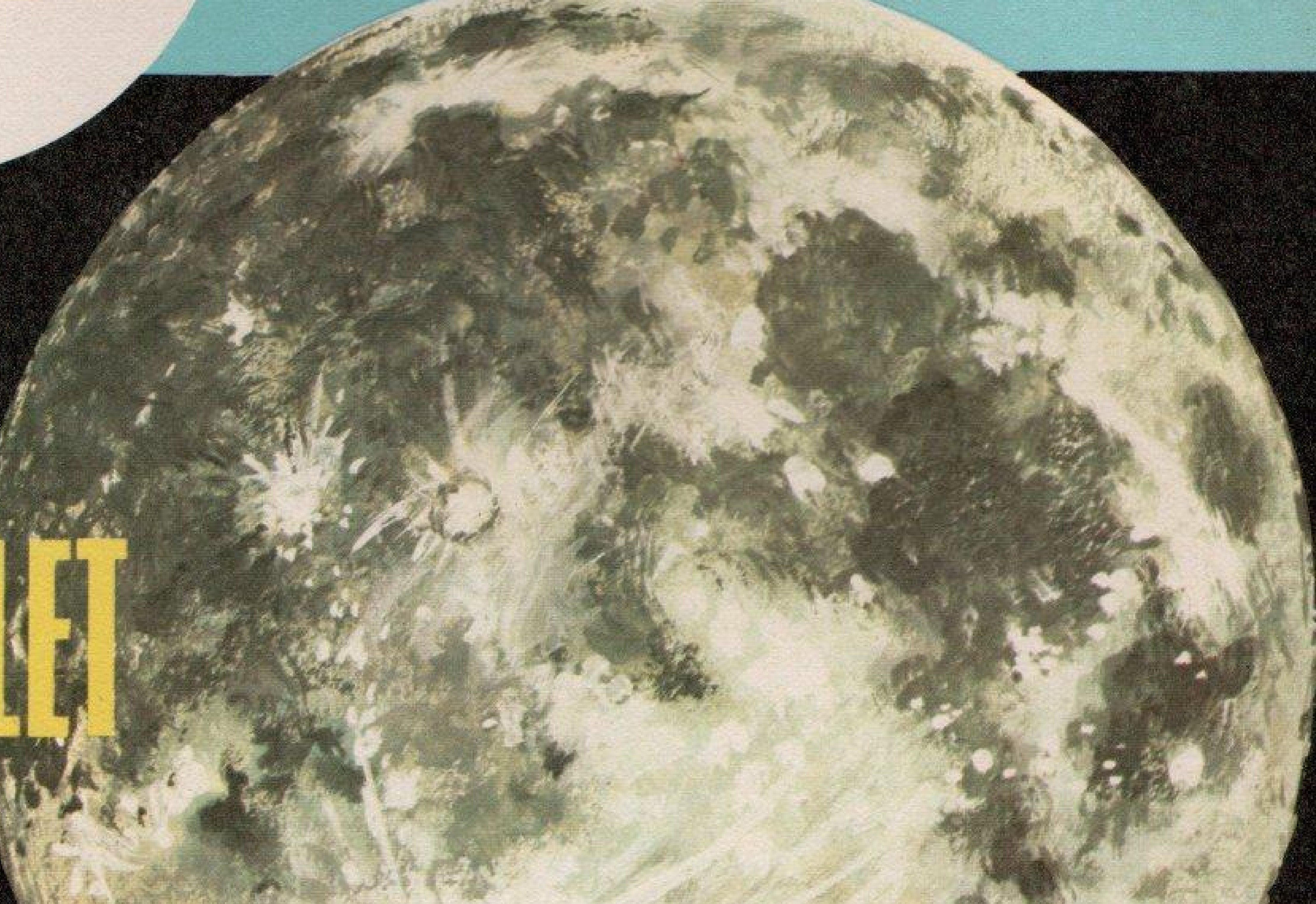
"I doubt it. I wouldn't even swear that they do not still exist somewhere on earth in our own time. That leader was a bombastic rascal."

"Did you think so?" A twinkle appeared in her eyes. "I thought he was a bit like you – astrological similarities so to speak. Just where and when *were* you born, Doctor?"



# TORO THE TINY MOONLET

How many moons can you see in the sky at night? If you think this is a silly question, scarcely worth an answer, then you are certainly no astronomer, because although we can only see one moon, this well-known object actually has a tiny 'baby' which shines along side its parent. This tiny moonlet, invisible to the naked eye, has been dubbed Toro by astronomers.



## TINY TORO

Toro was first seen as a miniature light dot on a telescope by scientists making routine checks at night some ten years ago. Since then they have been able to plot and check Toro's heavenly course.

Because it is so small the little moonlet has escaped many of the meteorites and similar objects which could have caused great damage to its surface, and Toro is probably exactly the same as when it was first created.

Now there is talk of Toro being used for a robot spacecraft landing in a few years time. American scientists are already working on the project, so perhaps one day soon we will hear not only of the man in the moon but also of the robot on the moonlet!

# Test your knowledge

In a space age of ever-increasing complexity, there is precious little room, as Dr. Who would be the first to confirm, for those ill-informed on the subject of space. Test your knowledge by seeing if you can answer these questions. Give yourself three points for every correct answer.

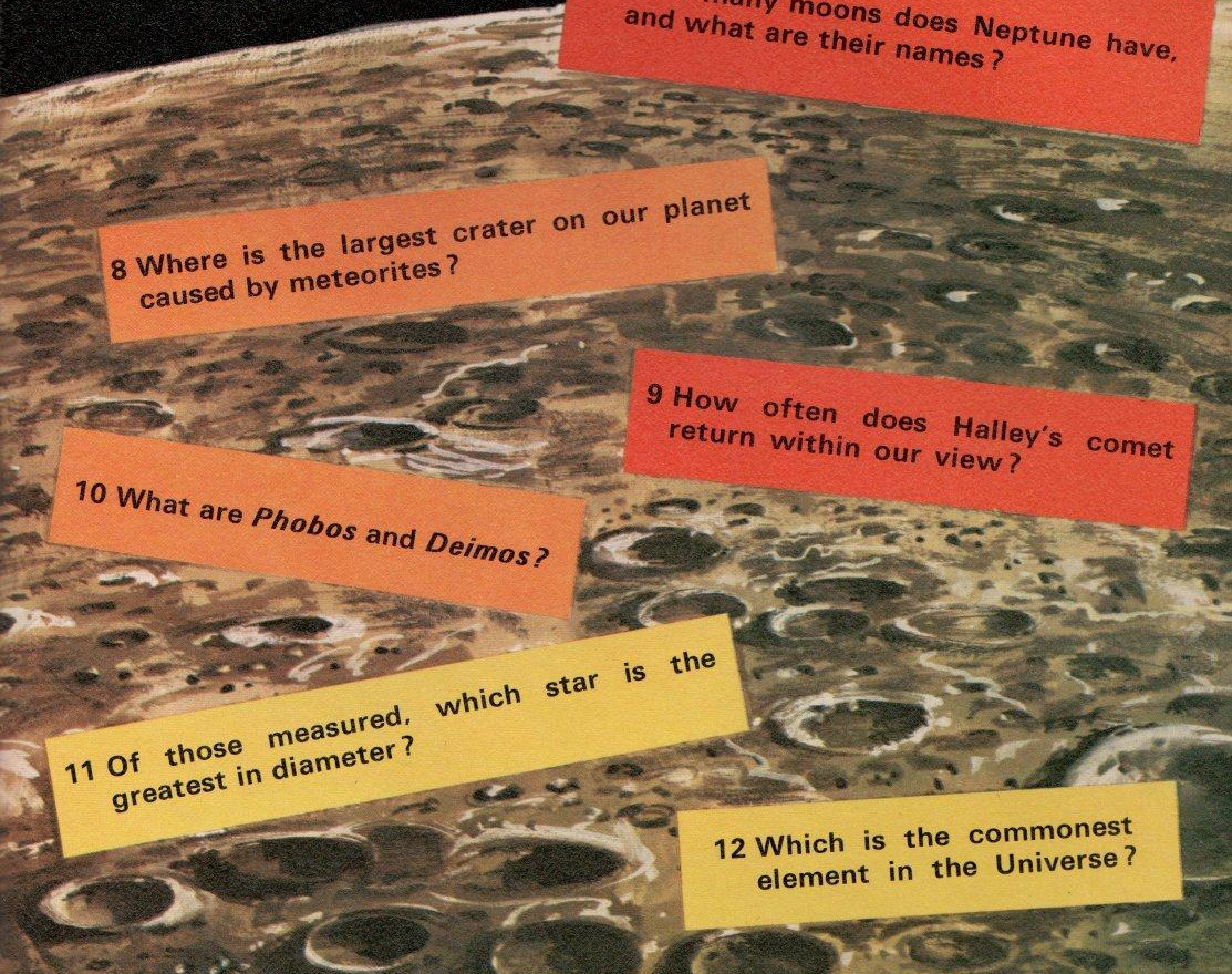
1 On many world maps there are lines going from pole to pole and dividing the world into sections. What are these lines called?

2 What is the 'spring equinox'?

3 Which observatory houses the world's largest astronomical lens?

4 Which planet is called both the *Evening Star* and the *Morning Star?*

5 How many satellites does Jupiter have?



6 Ten moons circle Saturn. What is the name of the biggest?

7 How many moons does Neptune have, and what are their names?

8 Where is the largest crater on our planet caused by meteorites?

9 How often does Halley's comet return within our view?

10 What are *Phobos* and *Deimos*?

11 Of those measured, which star is the greatest in diameter?

12 Which is the commonest element in the Universe?

If you notched up 27 points or more, you could well be an astronaut of the future; between 18 and 27 points, you are still fairly well-informed; anything lower, it's time for you to get back to those space books.

**ANSWERS**

1 Meridians

2 On 21st March the Sun reaches its zenith directly on the equator. Spring equinox means 'equal night', because all over the world on that day the day and night are exactly 12 hours long.

3 The Yerkes Observatory in America.

4 Venus. 5 Twelve. 6 Titan.

7 Two: Triton and Nereid.

8 The Diabolo crater in Arizona, which is almost a mile wide.

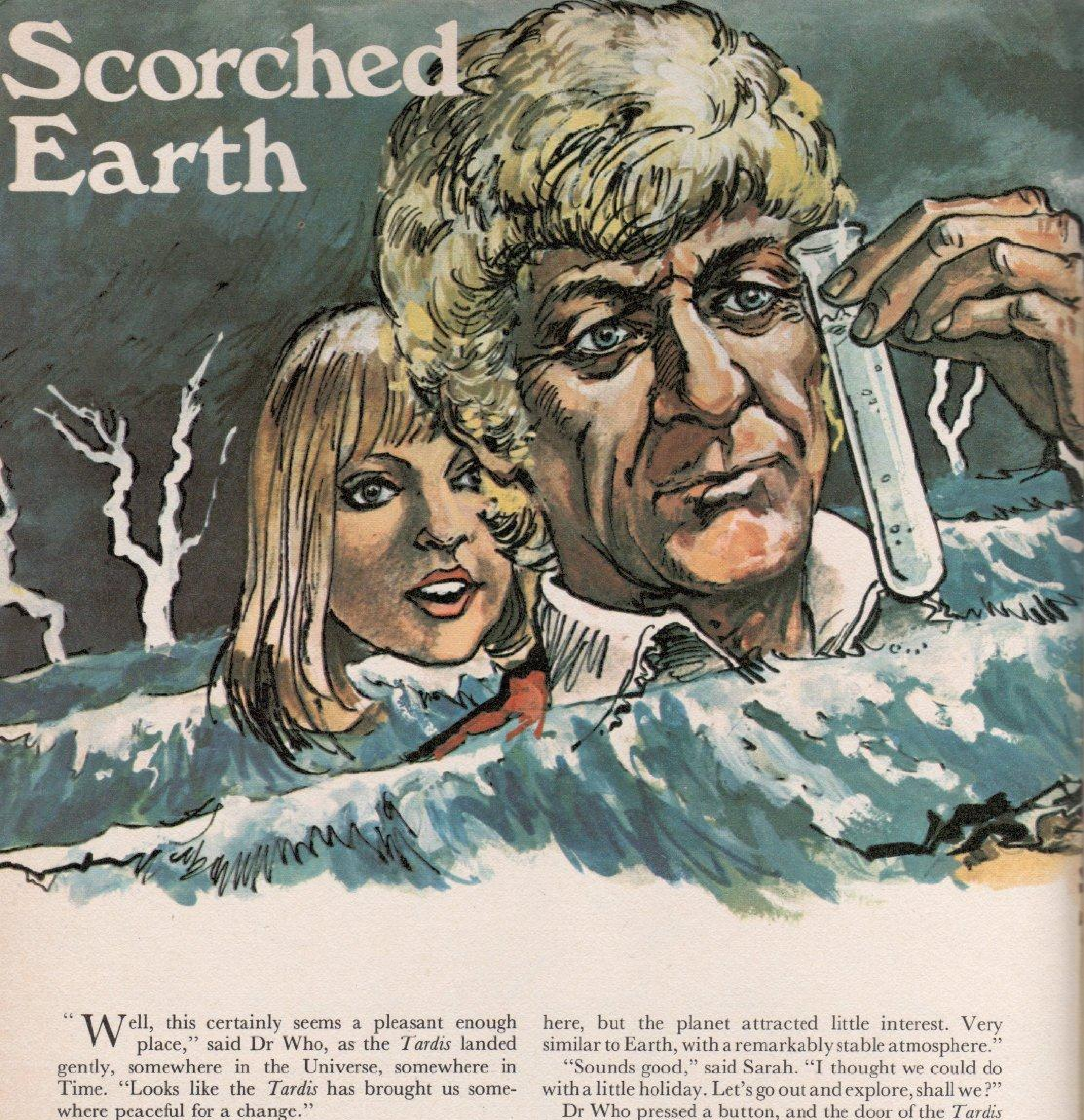
9 Every 75 years.

10 The two satellites of Mars, named after the horses of Mars, the ancient Roman god of war.

11 The 'red giant' *Epsilon Aurigae B*, at 2,500 million miles.

12 Hydrogen, calculated to comprise 90 per cent of all matter and over 99 per cent of matter in interstellar space.

# Scorched Earth



"Well, this certainly seems a pleasant enough place," said Dr Who, as the *Tardis* landed gently, somewhere in the Universe, somewhere in Time. "Looks like the *Tardis* has brought us somewhere peaceful for a change."

Sarah Smith reserved comment as she looked out through the viewing screen. It certainly looked peaceful enough, but experience had taught her that things very rarely stayed calm and quiet with the Doctor around.

"Where are we, Doctor?" she asked. "Have you been able to calculate our bearings in space?"

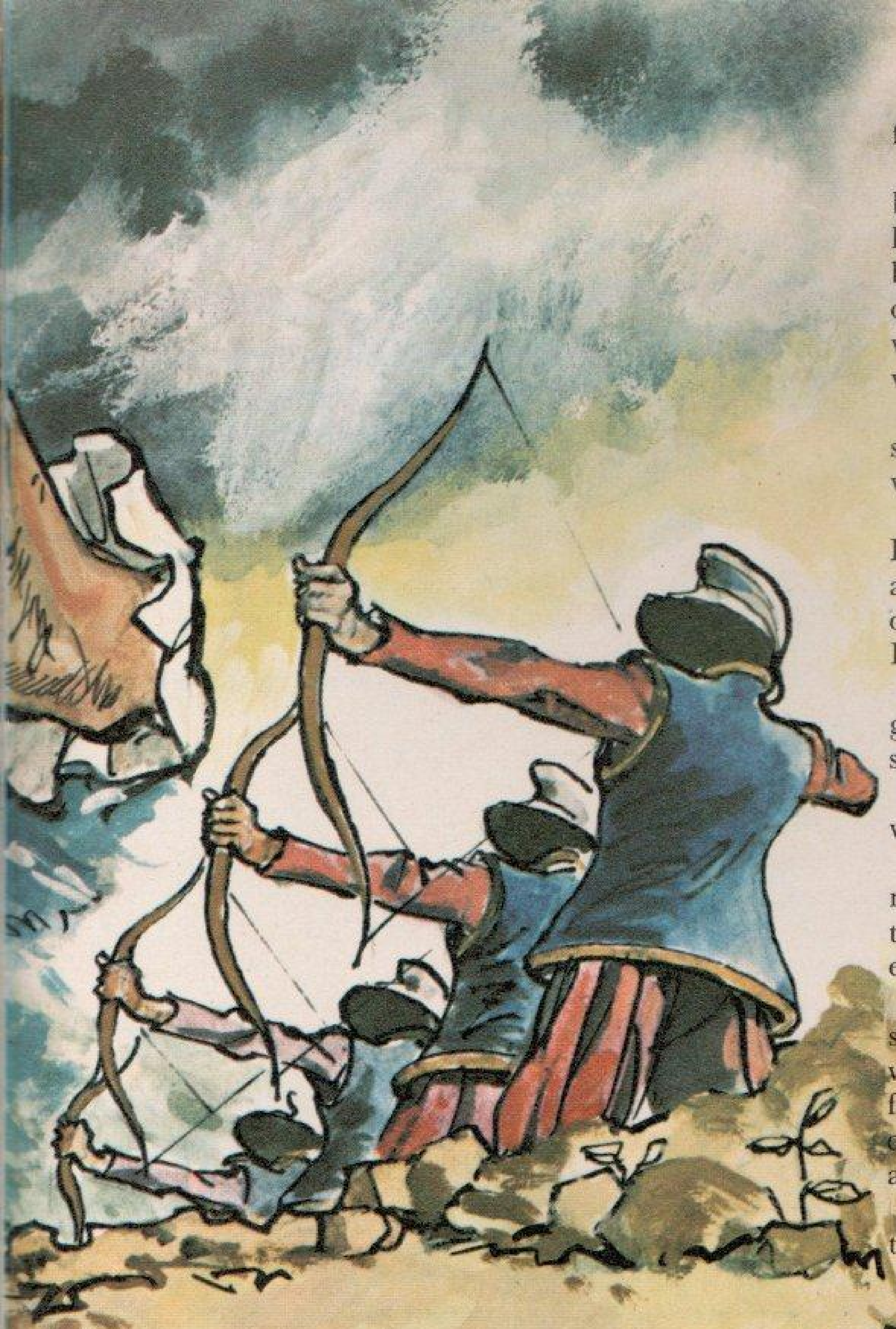
The Doctor was busy making calculations at the control console of the *Tardis*. "Hmm, photon propulsion specific impulse—30 million seconds. Estimated inter-galactic distance in light years . . . Ah yes, I have it. We have landed on the planet known to Earth as Varium III. Scientific exploration teams have been here, but the planet attracted little interest. Very similar to Earth, with a remarkably stable atmosphere."

"Sounds good," said Sarah. "I thought we could do with a little holiday. Let's go out and explore, shall we?"

Dr Who pressed a button, and the door of the *Tardis* opened slowly. They stepped out in the pale sunlight, and found themselves in one of the fields of a small farm, not far from the farm house, which seemed solidly built, in a style similar to the eighteenth century on Earth. Clustered around the farmhouse were one or two outbuildings, and the fields of the farm were separated by neat hedgerows.

"Mmmm, this is lovely," said Sarah, stretching her legs happily. "Just like England must have been hundreds of years ago. Don't you think so, Doctor?"

But the Doctor was hardly listening. He was bending down, studying the ground intently, and poking about in the soil.



"Come over here, Sarah," he said at last. "What do you make of this?"

Sarah could see that the ground looked very dry and infertile. The only evidence of plant life was a few brown, withered stems and leaves here and there.

"Looks like the field's been scorched," she said. "I suppose they've been burning the stubble of a crop. Farmers do that, don't they? The agricultural correspondent on the *Daily Star*'s a good friend of mine – which is how I came by this piece of knowledge!"

"Well, it's true that farmers do sometimes do that," smiled the Doctor, "but somehow I don't think even your friend would be able to explain this away too easily. Look, even the hedges and the trees are affected. And if you look closely, you'll see that it's not really like burning at all. No, I'd say this is probably something more like . . ."

The Doctor broke off in mid-sentence and flung himself to the ground, dragging Sarah with him. Just in time he'd seen the bowman, and even as he and Sarah flattened themselves along the ground, the first arrow whizzed over their heads, missing them by inches, and embedded itself with a dull thud in a nearby tree.

"Keep down, Sarah!" yelled the Doctor. "They'll fire again. They're all around us!"

The quiet rural scene on Varium III had certainly been deceptive. As Sarah twisted her head slightly to look around, she could see that they were surrounded by men dressed in the simple country costumes of olden times, but armed with a frightening array of weapons: crossbows, clubs, sickles, and catapults filled with heavy rocks.

"Shall we try and make it to the *Tardis*, Doctor?" said Sarah, determined to keep her head, though she was very frightened.

"No, we'd never get there, Sarah," replied the Doctor. "And anyway, I can see they've already posted a guard round the door. No, we'll just have to give ourselves up, and try and talk our way out of this. I wonder just what exactly they think we've done?"

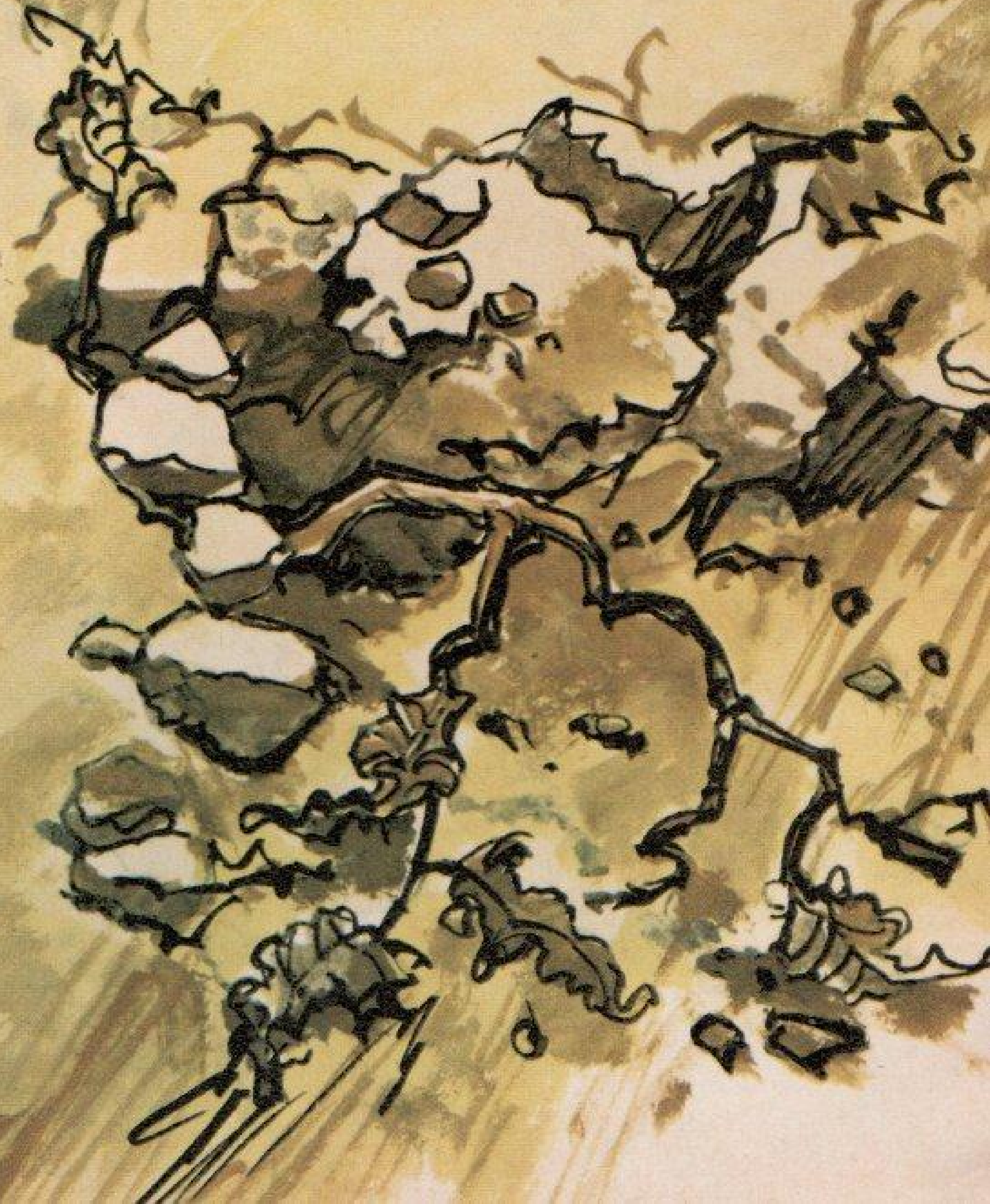
The Doctor raised his head gingerly from the ground, and called across the field. "Don't shoot. We surrender. We're unarmed."

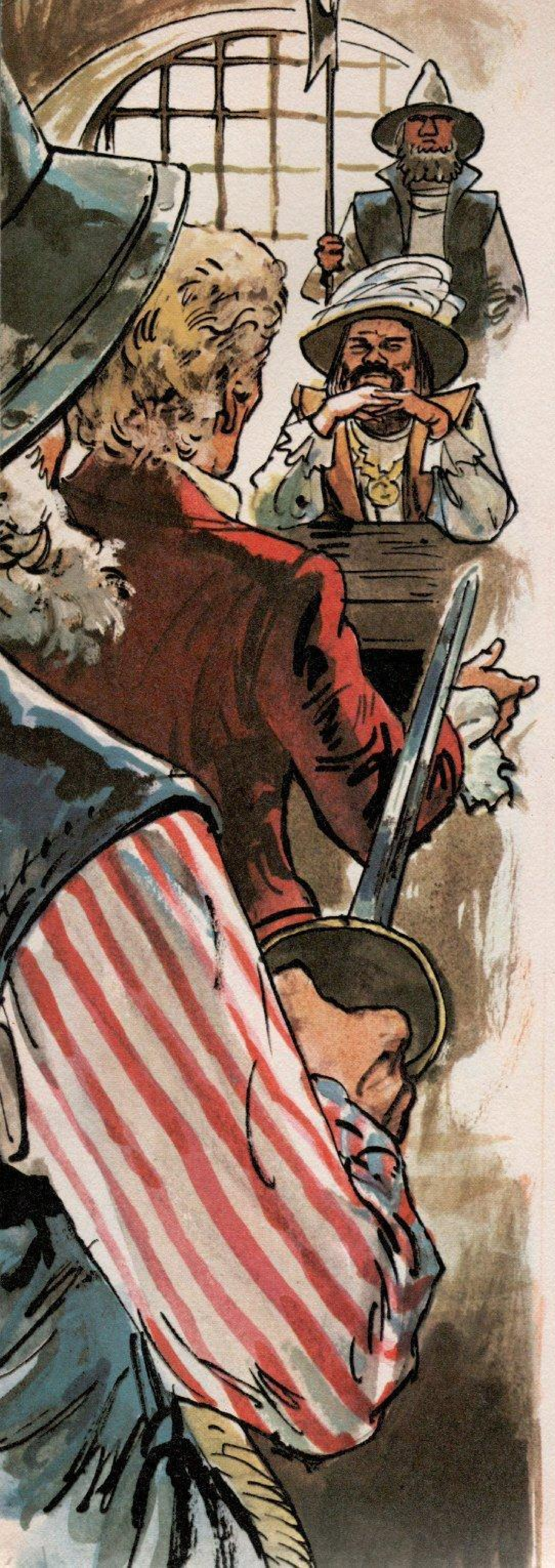
The ring of armed men closed slowly in, until they were completely trapped. At last one of the men spoke.

"You are our prisoners. You will come with us. You must answer to Marshal Zona. Stand up, and do not try to escape." The man stared at them with vicious eyes, and gripped his club more tightly in his hand.

Sarah and the Doctor stood up, and one of the men searched them, to make sure they were carrying no weapons. They led them off in the direction of the farmhouse, and pushed them into a small disused outbuilding, which had no windows and smelled damp and musty.

The door was slammed behind them, and Sarah and the Doctor were left alone. But not for long. Just five





minutes later the door opened once more, and two guards appeared.

"Marshal Zona will see you now," said one.

"We must be pretty important people to this Zona fellow," said the Doctor to Sarah. "I shall be most interested to hear what he's got to say."

"I shall be most interested if he says we're free to go," said Sarah. "I don't fancy being pushed back into that old barn again. I'm sure there are mice in there – and beetles too."

The guards led them into the kitchen of the farmhouse, where Marshal Zona was seated at the head of a heavy oak table. He was a tall, heavily-built man, dressed in the same simple clothes as those of his followers, and had obviously been chosen as leader of this quiet rural race because of his size and strength.

The guard spoke. "Sire, these are the prisoners who landed in the sky cart. It is they who are sending down the streaks of fire and scorching our crops."

"Streaks of fire?" said the Doctor. "What are you talking about, my good man?"

"Silence!" ordered the guard.

"You have sent the streaks of fire from the sky," began Marshal Zona, "and they have destroyed our crops. My people are starving. They live in fear each night of the streaks of fire and the great noises. But now at last we have captured you, and you shall die. Your sky cart shall be destroyed. And my people will be saved."

Sarah drew in her breath at the mention of the sky cart – the *Tardis*.

"Doctor," she whispered, "if they destroy the *Tardis* we'll never be able to escape from this place. Even if we manage to get away from the guards."

"Don't worry, Sarah," replied the Doctor. "I've set the electronic locks. The *Tardis* is invulnerable to attack. But we still have one or two little problems . . ."

"Cease your chatter, prisoners," spat out the guard.

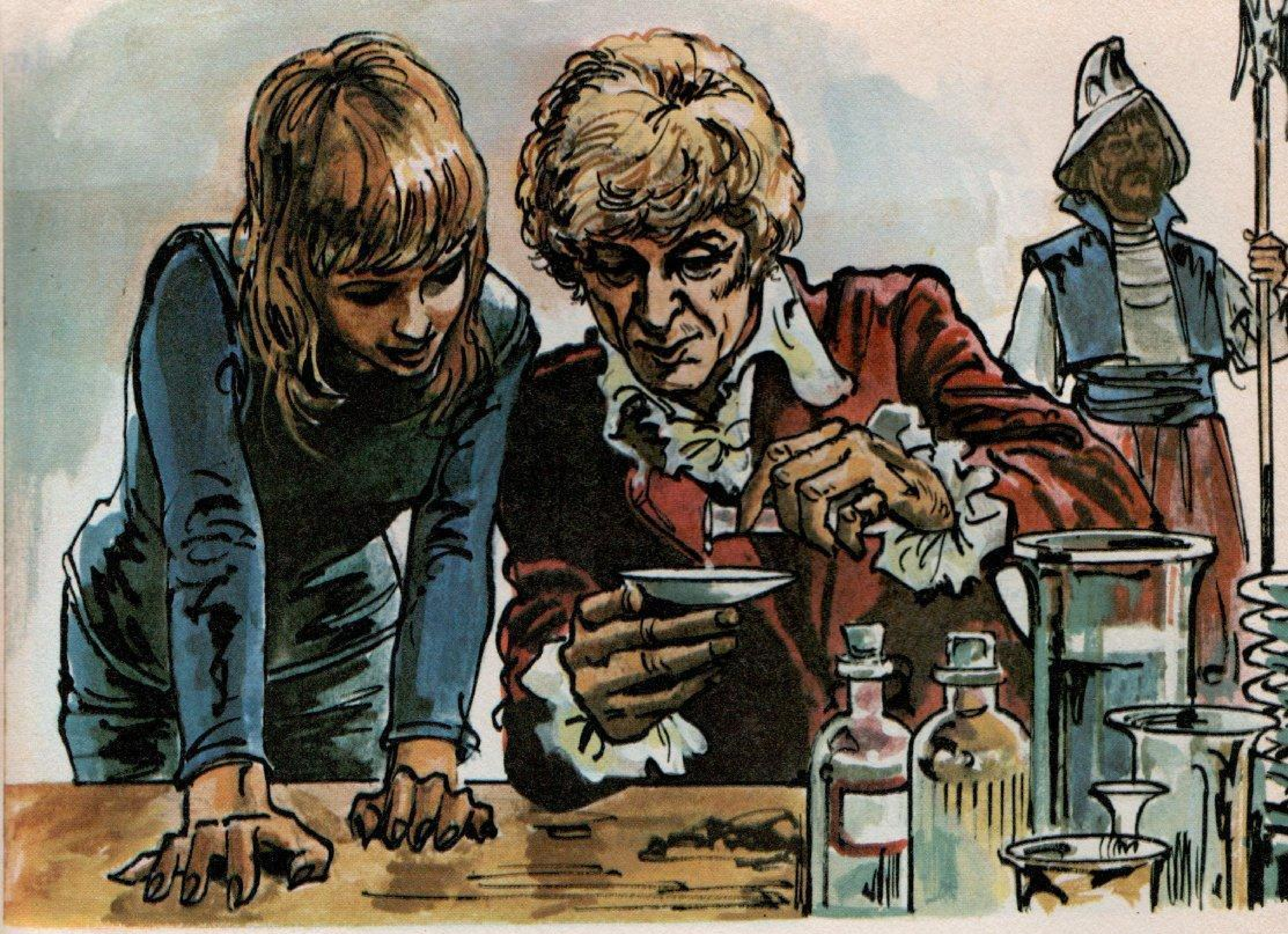
"Marshal Zona," said the Doctor, "you must listen to us. We are not your enemies. We have no knowledge of the streaks of fire. We want to help you."

"You lie, prisoner. You came in a sky cart from the skies. It is you who have sent us this disaster."

"No," said the Doctor. "It is true we came from the skies. We are travellers from a land far away from yours. But we have come in peace. You must trust me. I was looking at your crops before your men arrested us, and I believe that the scorching can be stopped from spreading."

The Marshal was plainly at a loss. These people didn't look or act like evil enemies, it was true. But they had come out of the sky. The prisoner the girl called 'doctor' said that they had come from a land far away from Varium III. The Marshal had heard stories that such lands existed, but none of his people had ever found them. Perhaps those old stories were true, and perhaps the prisoners spoke the truth.

The Marshal had made his decision. "Very well," he said, "I will give you a chance to prove what you say. You may go out into the fields, and look for a solution to the plague of the scorched earth. My men



will help you all they can. But be warned – do not try to escape. The guards have orders to kill without hesitation."

"Thank you, Marshal," said the Doctor, breathing a sigh of relief. "I will do all I can to rid you of this plague."

"You have until nightfall tonight," said Marshal Zona. "If you do not succeed, you will die. Both of you," he added menacingly, pointing a finger at Sarah.

"Well, we're safe for a while, Sarah," said the Doctor, as the guards led them out into the fields again. "So long as I can find a solution to the 'scorched earth' before tonight."

"Have you any idea what might be causing it?" asked Sarah.

"Yes. I'm pretty sure that this is a very rare strain of virus, which has been activated by that freak storm they had here recently."

"Freak storm? Of course – the streaks of fire and the great noises! But surely they've had storms here before?"

"Probably not in living memory. As I told you, Varium III has an almost perfectly stable atmosphere. Did you notice how weak their sun shines? There are only very occasionally any extremes of weather here. No wonder they were all so frightened by the storm."

"Doctor, do you think you'll be able to stop the virus spreading?" asked Sarah.

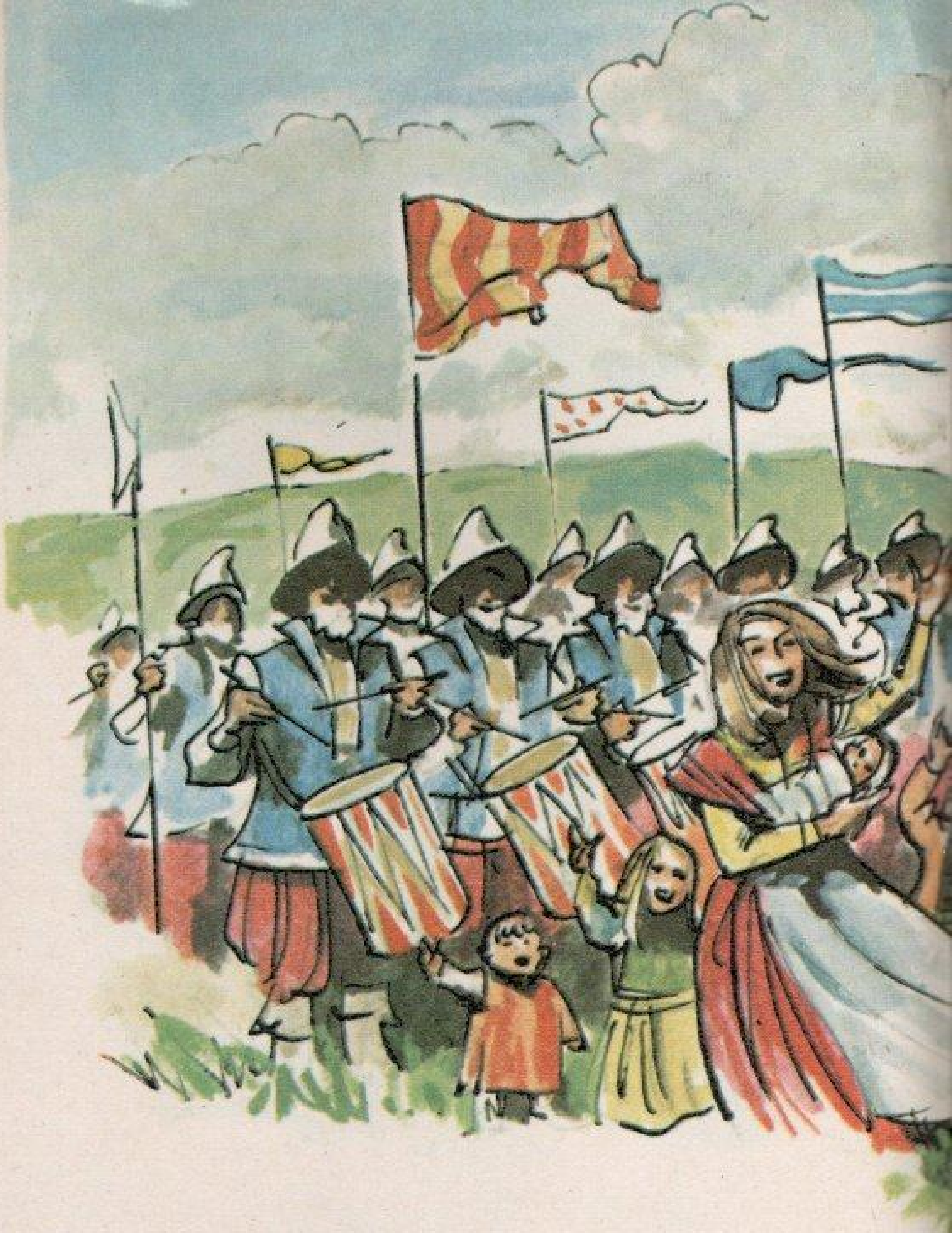
"I'm certainly going to try." said the Doctor, opening the electronic locks on the *Tardis*, and setting up his laboratory bench. "For their sake – and for ours!"

The Doctor asked Marshal Zona's men to bring in some big handfuls of the affected soils for analysis. They were very ready to help him, but they never once let either Sarah or the Doctor out of their sight, and they always kept their crude but vicious weapons by their sides.

The Doctor worked all through the long afternoon, trying one chemical compound after another on the powerful strain of virus. Nothing seemed to have any effect.

"This is the most virulent strain I've ever come up against, Sarah," said the Doctor at last, looking perplexed and worried. "It's going to be a lot more difficult than I thought. I've been racking my brains for a solution, but every known method has failed so far."

"But, Doctor," said Sarah quietly, beginning to feel anxious, "you only have another few hours. Marshal Zona wasn't joking when he said he'd kill us. And we can't possibly escape in the *Tardis* – they've got us much too well guarded."



Just then, a guard entered the *Tardis* with a tray of food. There was a very skimpy helping of bread and cheese for the Doctor and Sarah to share.

Sarah looked at the tiny amount of food on the wooden platter. "Gosh, this doesn't look too appetising," she said. "I wish it was a big plate of fish and chips – with plenty of salt and vinegar!"

The Doctor leapt up without answering Sarah, and raced back to the laboratory bench. Sarah followed him in, wondering whatever could be the matter. The Doctor was busy with a rack of test tubes, adding a white substance to some of them.

"Keep your fingers crossed, Sarah," said the Doctor. "All the greatest scientific discoveries are found by chance, or so they say. And you might just have found the answer to our problems. Sodium chloride – common salt."

"Do you really think it might work, Doctor?" asked Sarah anxiously.

"Well, all we can do now is sit and wait, Sarah," replied the Doctor. "If this doesn't work we're going to have to do some quick thinking when darkness falls – because I can't think of anything else to try."

The next few hours seemed very long indeed. Soon it began to grow dark, and still there was no change in the soil in the test tubes. Then they heard a deep voice at the door of the *Tardis*. It was Marshal Zona.

"Prisoners, your time is up. If you have failed, now you must die."

"Let's go and see, shall we?" said the Doctor, leading the way to the workbench.

Sarah held her breath as Doctor Who walked over to the test tube rack. And she breathed a sigh of relief when she followed his pointing finger. The solution had worked. Several of the test tubes contained soil which had now completely reverted to its natural colour. The 'scorched' appearance had almost completely gone.

"Yes, Marshal, we've found the solution," said Doctor Who. "And it's a very simple answer – salt. Common table salt. All you have to do is cover the fields with salt, and very soon they will be fertile and green again."

But the Marshal didn't react as they had imagined he would.

"Salt!" he cried contemptuously. "Bah! What use is that? Where would we find enough salt to cover all our fields? This is a useless answer. You die, prisoners!"

"Wait, Marshal," said the Doctor, "have you forgotten that you have seas full of salt water? There is such a sea not half a mile from here. I have seen it on maps of your planet."

"You are talking of the great water?" said the Marshal suspiciously. "But it is dangerous there. My people never venture near it. There are strange creatures in the water with no legs or arms. We have no use for the water, so we never approach it."

"Well, you've got a use for it now," said Doctor Who. "I will show you how to build a simple pump and pipeline to carry the salt waters of your sea to your infected fields. And while you wait to plant new crops and to see them grow, I will show you how to find food for your people in the seas. There is no need to be afraid of the great water, or of the creatures – which we call fish."

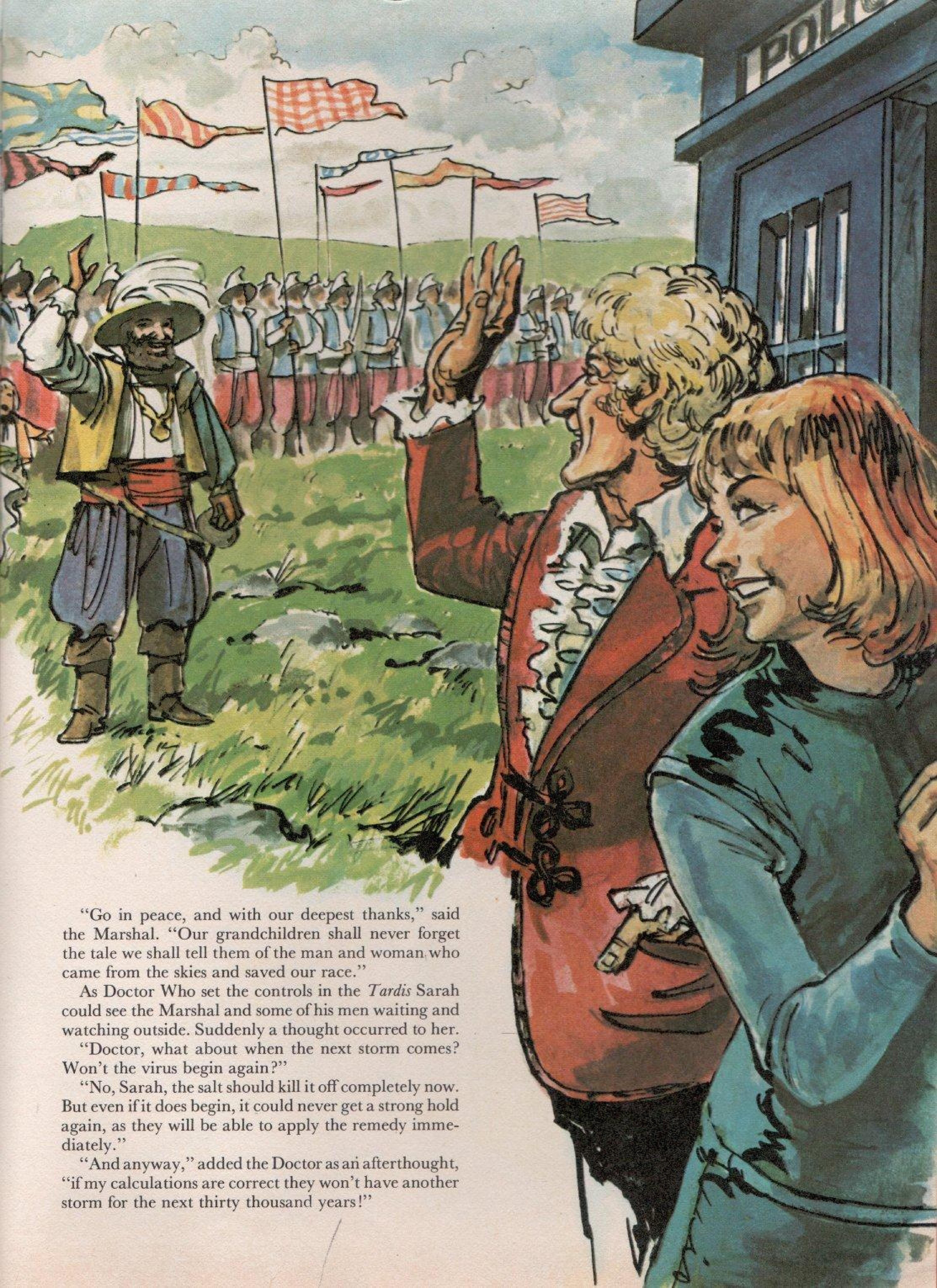
The Marshal kept Sarah and the Doctor prisoner for the next few days, until he was sure that everything they had told him was true. At last he called them to him.

"You have done my people a great service," he said. "We are saved from famine and death. Everything you have told us is true. How can we ever repay you?"

"We need no repayment, Marshal Zona," said the Doctor. "But we must leave you now. You no longer need our help, and we have many journeys to make – to places far away which your people have never dreamt of. We will go at once."

**ANSWERS**

1. None, because the boat rises with the tide!
2. None – it's a hole.
3. First make a circular cut around the pie, then two cuts across. Remember, the pieces didn't have to be equal.
4. They would have to stand back to back.
5. Give one person the basket – with one apple still in it.



"Go in peace, and with our deepest thanks," said the Marshal. "Our grandchildren shall never forget the tale we shall tell them of the man and woman who came from the skies and saved our race."

As Doctor Who set the controls in the *Tardis* Sarah could see the Marshal and some of his men waiting and watching outside. Suddenly a thought occurred to her.

"Doctor, what about when the next storm comes? Won't the virus begin again?"

"No, Sarah, the salt should kill it off completely now. But even if it does begin, it could never get a strong hold again, as they will be able to apply the remedy immediately."

"And anyway," added the Doctor as an afterthought, "if my calculations are correct they won't have another storm for the next thirty thousand years!"

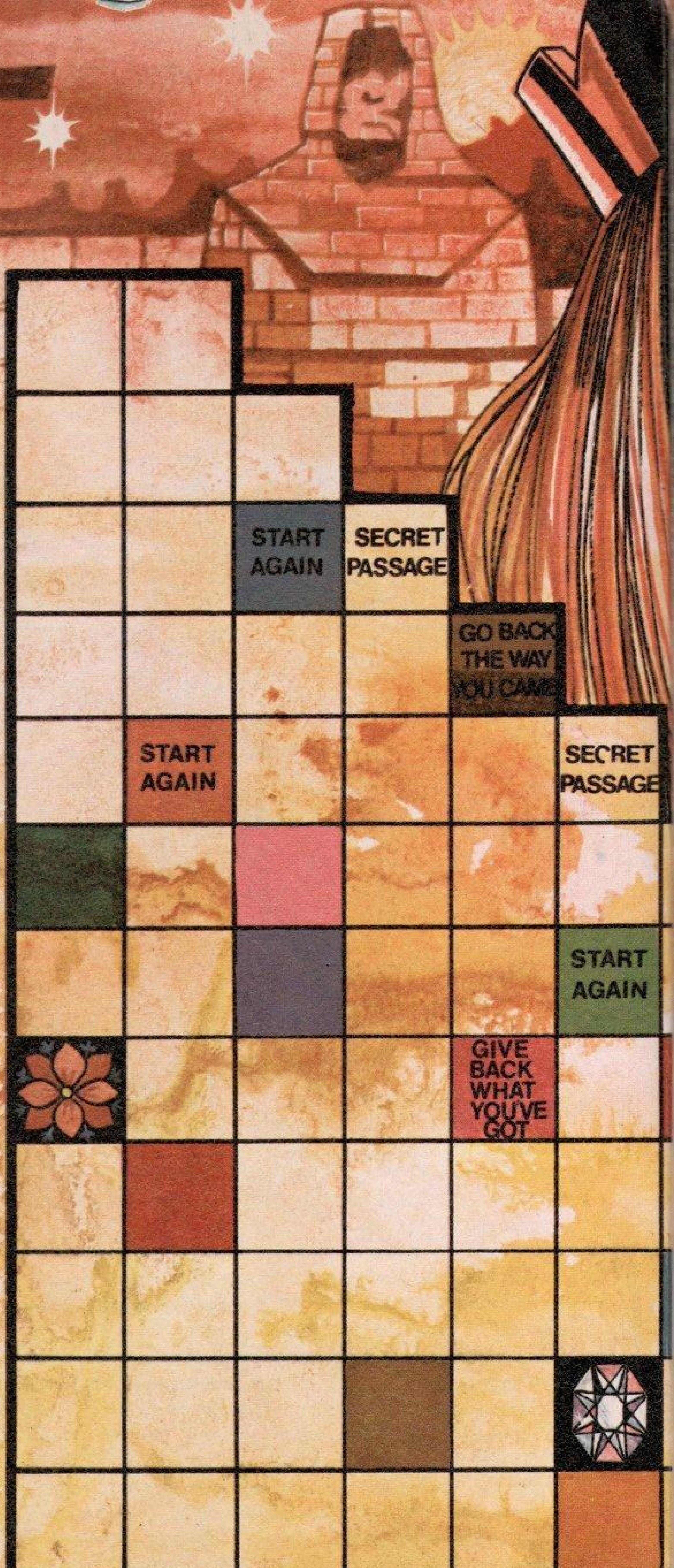
# THE SECRET STEPS

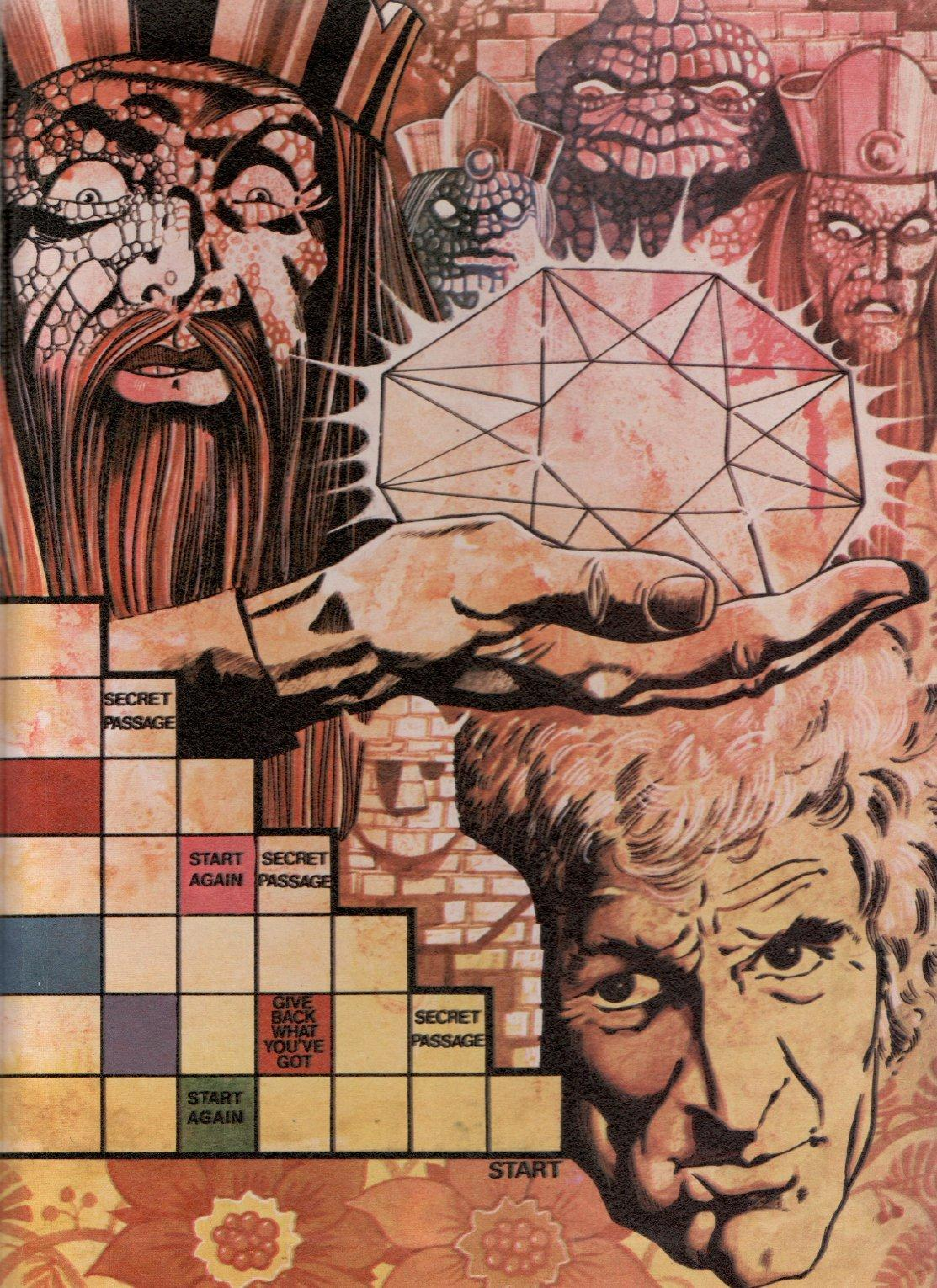
**A game for two or more players.**

Dr. Who has been captured by the barbarous Aktexians, fanatical worshippers of the three huge suns that give them perpetual daylight. He is about to start the long climb to the top of the Ixis monument, where he will be offered up as a sacrifice. His only hope is to find one of the secret entrances on the steps and recover the sacred diamond and flower that are inside the monument itself.

**How to play.**

Any number of players can join in, all that is needed is a dice and some counters. Each player throws the dice and moves up the steps from the bottom. When a player lands on a step that contains a secret entrance to the monument he may move inside. He picks up the sacred objects by landing on the same square. If a player lands on a coloured square he must miss one turn. Inside the monument, players can move in any direction, but they must say which way they're going before they throw. If a player lands on a square containing instructions he must obey them. Players must leave the monument by the same entrance they came in. A player cannot enter the same way twice. If a player reaches the top empty-handed he must make his way down before entering. The winner is the first player to take both the flower and the diamond to the top.




SECRET PASSAGE
START AGAIN
SECRET PASSAGE
GIVE BACK WHAT YOU'VE GOT
SECRET PASSAGE
START AGAIN
START